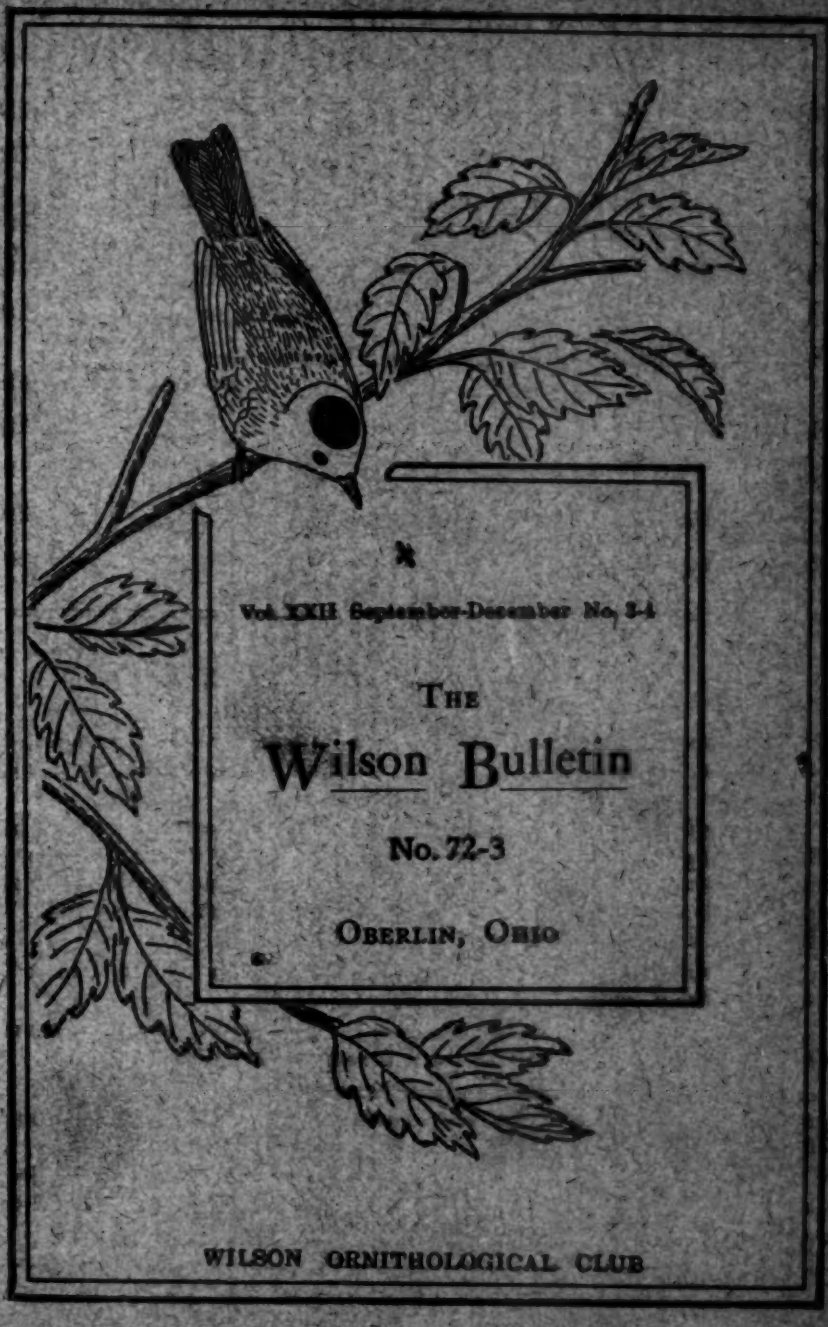

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The Wilson Bulletin

No. 72-3

Oberlin, Ohio

Wilson Ornithological Club

CONTENTS.

At the Sign of the Northern Flicker.	Althea R. Sherman	133
The Birds of Cedar Point and Vicinity.	Lynds Jones	172
One Day's Observations of Northern New Jersey Birds.	Louis S. Kohler	183
The End of the Night.	Wheeler McMillen	184
The Bobolink.	Wheeler McMillen	186
Preliminary List of the Birds of Essex County, New Jersey.	Louis S. Kohler	187
Editorial.		196
Reviews		197
Field Notes.		200
Names Proposed for Membership.		204

THE WILSON BULLETIN

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A Flicker Courtship

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AT THE SIGN OF THE NORTHERN FLICKER.

INTRODUCTION.

The studies upon which this paper is based were conducted at National, Iowa, which is situated in the north-eastern part of Clinton county, a few miles inland and south-west from McGregor. That it is an exceptionally favorable place for the study of birds the readers of the WILSON BULLETIN know from the few short articles and notes by the author of this paper which have appeared in the BULLETIN from time to time.

If we properly interpret the particular function of the WILSON BULLETIN, this paper accurately typifies it. While there is a certain value to the detection of slight differences in the plumage of our North American birds from museum specimens, and perhaps a necessity for giving names to groups of idividuals showing the differences, it remains for the careful student of the livng birds to detect the causes for such variations. Of the two fields of study it must be clear to all that the study of the living bird in its environment is much

the more necessary. THE BULLETIN has consistently urged upon its readers the earnest pursuit of field studies, and takes this opportunity to again urge it. We *must* know more about the living bird before we can expect to assign him his proper place in the world of taxonomy as well the world of conservation in all of its aspects. Our imperfect knowledge makes any system of taxonomy admittedly tentative.

If we read this paper aright we will detect all along between the lines a devotion to the study in hand which spells an enormous amount of labor. Try it if you don't believe it!

[ED.]

The West End of the Barn in which the Flickers Nest

AT THE SIGN OF THE NORTHERN FLICKER.

BY ALTHEA R. SHERMAN.

The apartment building that displays flicker-signs all the year around is our barn. These signs consist of the holes chiseled through the siding; the marks left by the birds' muddy toes and tails, and the splashes of gastric juice which sometimes adher to the walls of the barn for a distance of two feet above and seven feet below the hole, and remain many weeks before they are washed off by the rain.

The date of the making of the first hole has not been kept, but as long ago as 1897 a pair of Flickers nested in the space into which this hole opens, a space four by fifteen by twenty-three inches formed by a board parallel to the rafters, nailed to the studding which kept the hay back from the wall of the barn. For purposes of observation it was covered with a movable board which had a peep-hole in it. In this accidentally formed cavity three years out of four Flickers raised their young, but in the spring of 1903 there came a frantic female that would not settle in the old nesting place in the east end until the pair had drilled two other holes, one in the west end, and the other in the south side of the barn. Back of each of these new holes a box was placed in the following spring, but

these proved too shallow to suit the birds for other than roosting places. Early in 1908 the first boxes were replaced by boxes made to hold one hundred cakes of that fair emblem of civilization—soap. These offer a nest room eight by twelve inches on the bottom and eighteen inches deep. In the top of each box a hole was made for observations, and a few inches from the bottom a hole large enough to withdraw the hand while it held a well-grown nestling. This hand-hole was closed by a trap-door, and the bottom of the nest was covered with excelsior, into which sawdust was firmly packed.

One male Flicker has been the subject of study for four summers. The conviction that it is the same bird each season is founded on the facts of his increasing tameness year after year, his unhesitating occupancy of the barn, and the shape of his almost circular malar stripes. On the fifteenth of April, 1908, he had taken possession of the south box, and was calling, drumming and practicing flicker-antics in the presence of a female, believed to be his mate. That he with his spacious ready furnished apartment may have proved unusually attractive to the female heart is an incident, which ought not to be too severely condemned by a race of beings among whom male creation is often courted for no superior reasons. Whatever were the underlying motives it is certain that by the twenty-fourth of the month two females were conducting an ardent competitive courtship which lasted five or six days. It was impossible to detect any new methods in their manner of wooing. There were the same struttings and spreading of feathers, the same dancing, bobbing and bowing that is practiced by the males in a similar situation.

On the evening of April 30, the rivalry having ended, a female was found roosting in the west box, two nights later the male was there. On half of the remaining nights before the first egg was laid the female roosted in the west box while the male occupied the south one. A burning question arose as to which box would be used for breeding purposes. The south one was much better located for human observations, also for

CHARACTERISTIC POSTURES

bird comfort, it being in the shade of tall maples and a walnut tree. Both holes had been used by the birds during the courting season, and in both boxes the excelsior had been torn up and carried out, therefore the finding of an egg in the south box on the morning of May 15 was a pleasurable occasion.

From what has been related it easily may be seen that the male bird chose the nesting place, and persuaded his mate to lay her eggs there, even when she was inclined to nest elsewhere, and when she had a box quite as good as his.

The preliminaries to nesting this season differed little from those of last. Again the male suffered a dual courtship, but it lasted one day only. Three days thereafter his mate cleaned house although the sawdust was fresh and needed not to be cast out. Again there was a seeming indecision as to choice of box for nesting, and again on May 15 the first egg was laid in the south box. This made the third year when laying had commenced on that date. On other seasons the date had been a little earlier, and once a month later.

Before the eggs were laid in 1908 the male roosted part of the time in the south hole, and the female part of the time in the west hole. While the eggs were being laid, and before incubation began the male roosted in the box with the eggs. After that, incubation or the brooding of the young at night was performed mainly by the male, but on several nights the female took these tasks, and he went to lodge in the west box, where she generally, but not always, spent her nights. This nocturnal interchange of duties appears to be somewhat unusual. In 1909 the order of things was changed a trifle. The male bird began roosting in the south box on the evening of April 17, and spent every night there until that of June 23, sixty-seven nights in all. With the exception of five nights the female was a regular occupant of the west box from April 24 to June 3, after which she spent a few nights in the east hole. This desertion of her lodging place may have been caused by unwelcome visits made there by Screech Owls. For it was in this west box on April 5 that a Screech Owl was found sitting on

four fresh eggs. This nesting was ruined by a violent wind storm, yet it was believed that the owls occasionally returned to their chosen quarters.

It may be in place to say a few words regarding the popular conception of a Flicker's nest. It is usually described as "a hot, dark hole." The nest in the hollow tree cannot be vastly different from that in the barn. There it is hot when it is hot elsewhere, and it is cold when it is cold elsewhere, even when it is windy outside enough of the breeze enters to stir the feathers on the bird's back. But the worst misapprehension exists regarding the darkness in the nest. It is surprising how much light enters through a hole two and one-half inches in diameter. In the case of the south hole in our barn it lights the box sufficiently in the daytime for one to read a newspaper spread on the bottom, when the eye is at the customary distance of about twenty-two inches.

The number of eggs laid in these barn nests has been from seven to nine, with generally one to three infertile. They were deposited on the hay in the old nest, on the level surface of the sawdust in the new without any effort to hollow out a place for them. Beginning with the laying of the first egg it is the custom for one of the pair to remain in the hole as a guard for the jewel-like treasures that lie there. A lapse in this guardianship duty must have occurred some time in the day of May 16 last, for an enemy entered and destroyed the two eggs of the nest. Circumstantial evidence pointed to a pair of Red-headed Woodpeckers that in their search for a nesting-place were acting like beings possessed by an evil spirit. The next morning the distressed female Flicker flew about as if seeking a new nest. Her mate sitting in the south hole, called to her, evidently coaxing her to return to the old place, which she did.

A study of the growth of the young by weight has included the weighing and the marking of the eggs in the order in which they were laid. The usual time for depositing the eggs in the nest appears to be the hour between five and six o'clock in the

morning. The first exact data was obtained May 20, 1908, when the sixth egg was laid at five o'clock and forty-eight minutes. It was five o'clock and eighteen minutes on May 22 of this year when the sixth egg of the new series was laid, and the seventh was on the following morning at five o'clock and forty-nine minutes. The marking of this seventh egg had been postponed until four o'clock in the afternoon when a little surprise was in store. Beside it lay the eighth egg left there sometime between the hours of eleven and four o'clock. It made the identification of the seventh egg impossible so the two were marked as twins. The weight of one of these eggs was a trifle in excess of that of any of the others, and the weight of the other twin was above the average. Before six o'clock the next morning the ninth egg of the new series—the eleventh one of all—had been deposited. At this juncture a message summoned me to a distant state. My absence extended over the greater part of the time of incubation, which probably did not differ much in history from that of the nests of previous years from which I shall describe the nest activities of this period. I am greatly indebted to a friend, who in my absence visited the barn every evening and ascertained that incubation was performed by the male bird during all of the nights, while the female roosted in the west box every night except three.

By day the duties of incubation seem to be shared about equally between the two birds, who are close sitters, the eggs seldom being found alone. Of the length of the sittings no adequate record has been kept, but those lasting from one hour and a half to two hours have been noted. The bird that is returning to the nest announces its approach by a soft "wick-ah-wick" note, which the sitter answers as a rule, and at once takes its departure, flying past the mate that is hanging to the outside of the hole. It is contrary to Flicker etiquette for both of the pair to occupy the nest at the same time, and never but once have I seen one enter the hole until its mate had left. Then it was the male, who in his headlong haste, blundered in while the mother was feeding the yonug, and hurried her de-

parture. In the years of close study of this species I have never seen anything that suggested the feeding of one mate by the other and I doubt very much if this is done. The incoming bird enters cautiously, turns, inspects the works of creation without, hangs an instant with one foot grasping the lower edge of the hole and the other the wall below, then with a thud it drops to the bottom of the nest, but never upon the eggs. To cover the eggs the bird goes to one side of them, straddles those nearest to it, then with a hitching motion moves along until all are covered. No matter how wet and muddy it is out of doors the eggs have never been soiled.

After the nesting took place on the sawdust in the south box a new feature has been added to the routine of the nest. Before the bird covers the eggs or the young, whichever it chances to be, it eats some sawdust. The craving for sawdust seems to be limited to this period of the bird's life since no signs have been found to show that it eats any of the sawdust while it occupies the boxes before and after the nesting time. The amount eaten is considerable. That at one time the male ate three tablespoonfuls is deemed a modest estimate. An attempt to measure the amount both ate by a fresh supply daily showed the consumption of three or more handfuls. The sawdust came from sugar maple, white and red oak wood.

After the bird has arranged itself comfortably upon the eggs it goes to sleep. The female sleeps most frequently with her head turned until her bill rests among the feathers of her back. The male sometimes takes this position but not often. He sleeps with his neck flexed until his bill touches one wing, or with his head straight forward and turned down until it rests on the crown, or, the favorite position of all, with his head lying flat upon the bottom of the nest, thus making as fine a "picture of calm content as mortal ever saw."

From some former nests it had been learned that sometimes the eggs hatched in nine days, but more frequently in ten days after the laying of the last egg. On May 20, 1908, the sixth egg was seen to have been laid at five o'clock and forty-eight

minutes. Incubation began that day. On the morning of June 1, the eggs were hatching; four tiny Flickers were squirming in the nest, and as the father raised himself into a standing position one of the remaining eggs broke slowly open and another Flicker kicked itself into the world. It was a moment thrilling with interest when bird and shell were lifted from the nest, and the shell was found to bear the number six. The hour was nine o'clock and forty minutes. The exact time for incubation had been twelve days, three hours and fifty-two minutes. The seventh egg hatched four hours later making its period of incubation eleven days and eight hours nearly.

I was anxious to be beside the Flicker's box when their eggs hatched this year. Two periods for incubation had now been furnished, nine days and ten days from the date of the laying of the last egg. Therefore my return was planned for June 2. During the thirty-six hours that the iron horse bore two of us swiftly homeward, crossing and recrossing our longest rivers, and rushing over our most beautiful plains, one question kept recurring with insistent frequency: Was there danger in this case that the period might be shorter than ten days? If so, we should be too late for part of the hatching at least. When at length the Sign of the Northern Flicker had been reached, one peep into the nest revealed the facts that all nine eggs were safe, and dark with the embryos of the living birds.

The next morning being the tenth one from the date when the last egg was laid, and the eleventh from the time incubation began, a very early stand was taken beside the nesting box, but it was not until five o'clock and forty-two minutes that the occupant of egg No. 1 was sprawling in the nest. Three hours later the shells of eggs No. 2 and No. 3 were chipped, but the bird in No. 2, as well as that in No. 4, died in the shell after it had been pierced. The bird from the third egg was hatched at ten o'clock and two minutes, and the one from the fifth egg at ten o'clock and twenty-five minutes. At half-past one in the afternoon a shell that proved to be No. 6 broke open. This was the egg that was laid on May 22 at five o'clock and eighteen

minutes, hence its period of incubation had been twelve days, eight hours and twelve minutes, while that of the sixth egg of the previous year had been twelve days, three hours and fifty-two minutes. Although the shell of one of the twin eggs was chipped several hours before dark both of these eggs were hatched in the night, and the ninth or last egg at ten o'clock and forty-eight minutes on the following day, making its period of incubation eleven days and five hours, while eleven days and eight hours had been the period for the last egg of the clutch of the preceeding year. Roughly speaking, then, the time that our Flickers take for incubation is from eleven to twelve days.

The pellucid color of the newly hatched Flicker resembles that of freshly sun-burned human skin, but so translucent is the nestling's skin that immediately after a feeding one can see the line of ants that stretches down the bird's throat and remains in view two or three minutes before passing onward. This may be witnessed for several days while the skin assumes a coarser red, until it begins to thicken and become a bluish hue, before the appearance of the pin-feathers. These may be detected under the skin on the fifth day at the same time that bristle-like projections about one-sixteenth of an inch long announce the coming of the rectrices and remiges.

Until the young are about eleven days old, they lie in a circle in the nest, their long necks stretched over each other, then for nearly a week they press against the side of the nest. At seventeen or eighteen days of age, their claws having acquired a needle-like sharpness, they begin to cling to the wall of the nest, and when three weeks old they are able to climb to the hole and be fed while the parent hangs outside.

Although the eyes of the nestlings are not open until they are ten days old yet these organs are by no means dormant. An easy proof of this is made by placing the hand noiselessly over the entrance hole when they are no more than three or four days old, and are lying apparently asleep; up comes every head and they beg for food, getting none they soon sleep, when

the experiment may be repeated, gaining from the young the same response that is given when a parent darkens the hole.

That cry of the young which is so often described as a hissing sound, begins very soon after they are hatched. At first exceedingly faint it soon grows stronger and still stronger, and is uttered day and night for two weeks. A parent upon taking its place to brood these wailing nestlings begins to croon a lullaby and continues this musical murmur until it falls asleep, which often is quite soon. It has no effect in lessening the noise of the youngsters, yet the parent faithfully renders its cradle song until the young cease to make this noise which is about the time they begin to show fear. Of other cries that they make there is the chuckling noise uttered when the little one is in the act of seizing the food-bearing bill, and there is a cry that sounds like a whine. Still another one is a note of alarm given when the young are disturbed by some such thing as the opening of the trap door. This uttered in unison has a very theatrical effect strongly suggesting the chorus of the stage. After they have commenced to move about freely in the nest they make much of the time a pleasant sound like a chatter or quack, as if talking to each other. And lastly comes the grown-up Flicker "pe-ap," which they begin to call as soon as they climb to the hole. As one sits in the hole it appears the personification of juvenile impudence shouting its mandatory call. A change may be detected in the accent of this note after a feeding, when the fellow, that has received little or nothing having gained the hole, hurls after the retiring parent a yelp that sounds truly derisive.

This arrival at the entrance hole works a decided change in the young Flicker; he utters for the first time a call of his adult years, and he shows pugnacity remarkable because of its contrast with his earlier and later peaceful disposition. The versifier who wrote

> "Birds in their nest agree;
> And 'tis a shameful sight,
> When children of one family
> Fall out and chide and fight."

evidently was not familiar with the inside of a Flicker's nest, where they fight like little demons at times. Some broods are much more quarrelsome than others. Their battle-ground is in the vicinity of the hole. The one in possession of the hole maintains his supremacy there by occasional withdrawals of his head from the hole in order to deliver vigorous blows on the heads of all within his reach, causing them to shrink downward. This is the case with the stronger ones, the weaker ones frequently are driven from the vantage place. When the hole is large enough for two to thrust out their heads together, they draw within after the serving of a meal and fight furiously, while a waiting third may slip up and gain the coveted hole. But all their fighting days seeem to be confined to a few in the fourth week of their lives.

They have other occupations besides fighting during the last ten or twelve days spent in the nest. Preening themselves comes first, immediately followed by the amusement of running out their long tongues. This organ is extended the length of an inch and a half from the tip of the bill which seems extreme for such small birds. It is run over the wall of the nest, through each others feathers, or over a hand introduced into the box. The tongue is extended straight out from the bill, and the withdrawal is straight backward at times, but at other times it is whipped around almost at right angles to the bill, then disappears like a flash. They peck good-naturedly at each other and at their own toes; they hammer with the point of the bill, and of course they sleep much of the time either on the bottom of the nest or clinging to its walls. In sleep the head rests in various positions; when it is turned backward one can see exactly where the bill is placed; on these half fledged little creatures there is a naked strip between the feathers of the dorsal tract and those growing on the wing, upon this naked surface the bill rests, hence not under the wing but back of it—*parapternum*, beside the wing, describes it..

The tables of growth give the daily weights of the nestling Flickers from the time they were hatched until they left the

YOUNG FLICKER ON THE DAY IT LEFT THE NEST

nest. In 1909 the eggs, when fresh, weighed from 106 to 111 grains, and the same eggs just before they were hatched weighed from 91 to 96 grains. The young birds freed from the shells weighed from 83 to 85 grains. The hour for hatching was reckoned from the time an egg burst open; the rest of the act of exclusion from the shell took place either in my hand or in the weighing bag, hence there was no chance for the nestling to receive food before the first weighing. The first little Flicker was not fed until it was two hours and twenty-two minutes old, then the mother inserting her bill very, very gently fed it until its weight had increased three grains.

In very early life a meal is served to baby Flicker with many insertions of the parent's bill, as many as thirty-four have been counted, but from eight to twenty are the ordinary number, decreasing to three or four before the young leave the nest. A record made during a continuous watch of six hours and thirty-two minutes shows that each parent fed five times; that the father delivered his supply with eighty-two insertions of the bill, while the mother used but forty-one. Probably the father brought more food since on every count he proved himself the more devoted parent. In grasping the bill the point of the youngster's bill is at right angles with that of the parent's, thus the opening between the food-bearing mandibles is covered after the young have attained a few days of age, and any overdropping of food is prevented. This accident frequently happens in the early days of the nest, then the mussed up ants that fall are carefully picked up by the frugal parent when the feeding is over.

Those persons, who have watched and weighed birds from the hour of their hatching, realize what an advantage is held by the first-born. The few meals it receives in advance of the others give it a start that makes it stronger, its neck longer, and its mouth wider, so that it easily holds the lead in the race for food. This great advantage may be seen by comparing the daily gain of the oldest Flicker with that made by the others in the record for 1908, which is of nest life normal in all respects.

This record shows that the increase in the average weights is upward of one hundred grains per day for the first eleven or twelve days, after that from twenty-five to forty grains daily. All my records show that there is a period of four or five days somewhere between the thirteenth and twenty-second day when there is little increase, or sometimes a decrease in weights for a few days. Several other species, whose growth by weight has been studied, have furnished similar examples, and as this period of very slight increase, or possibly decrease in weight occurs not far from the time the nestlings begin to show fear, and their wing-feathers burst from enclosing sheaths, it is probable that three points of interest center about this period of their lives.

Although Flickers remain in the nest much longer than many of our common birds, and their rate of growth is very fast at first, yet the scales show that this growth is not proportionately very much greater than that of some other birds. Taking the following species on the ninth day of their lives we may find that the Flicker weighs twelve times as much as it did when hatched. Phoebe and Red-winged Blackbird have each increased their weight ten times, the Song Sparrow and Catbird eight times, while the Mourning Dove weighs but seven and a half times its first weight.

Numerous attempts have been made to ascertain the amount of food brought to the nest for one meal. The young were all removed from the nest except one hungry fellow that was weighed just before and after the visit of the parent. The increase in weight must have been that of the dinner just delivered. Experiments show that to a nestling weighing 743 grains was given a breakfast that weighed 76 grains, to one weighing 1430 grains a dinner of 118 grains, and to another that tipped the scales at 1530 grains a supper of 103 grains. Probably the weight of the average load is not far from one hundred grains.

The number of daily visits increases with the age of the nestling from about ten on the first day to four or five times that number later. Six or seven meals may be served within an

early hour, as many as four arriving within seventeen minutes, while at other times nearly an hour may intervene between two visits. When the young were eighteen days old during a watch of four and one-half hours twenty-five meals were given to five nestlings that wore distinguishing marks. Three of these are positively known to have received five meals apiece, and two received four apiece, if the two undetermined feedings went to the latter pair, then each one was fed at the rate of one meal every fifty-four minutes. On the following day a count was made of meals given during four hours, which numbered twenty-two. At this age the young Flickers every hour partake of food to the amount of one-sixteenth of their own weight, or in one day consume their full weight of food, yet the table of growth shows that it does not add to their weight to any noticeable extent.

In delivering the food the parents give Scripture measure, yet the young are never too full for utterance. With the food literally hanging over the edges of their bills they clamor for more until the parent leaves the hole. From this exposed food there comes a strong odor that fills the box and penetrates to the nostrils of the observer for three or four minutes after the feeding is over. The odor is not a disagreeable one, but strongly reminds us of that of a slightly over-ripe orange. It remains for the entomologist to tell us if this is the aroma of emmet jam. The filled up fledgeling slowly slips down to the bottom of the nest, there to sleep for a half hour or more; but before tranquility is restored to the nest there is a violent shaking of wings.

The subject of the cleaning of the nest would not be discussed here at length if it had not long been somewhat of a mystery to many, and if Flickers had not often been called very untidy house-keepers. The fact is they are very solicitous to keep a cleanly nest. Like many other altrical birds the Flicker eats the excrements for several days, generally for nine or ten days, then it begins to carry them out after feeding, often going out three times with the dejecta before settling down

to brood. If none of these are lying in the nest when the parent enters it begins after the feeding to solicit them. This is done by biting the heel joints sometimes, but more often the fleshy protuberance that bears that budding promise of the tail. That this nagging is no gentle measure may be judged from the way the nestling cries and tries to wriggle out of reach, for the parent is not content with three or four bites, but frequently inflicts as many as a dozen on one bird before it turns its attention to another. The victim of one parent's cleanly habit may receive the attention of the other parent in a very few minutes, and be worried until it yields a second excrement, then soon fall under the blows of the first parent again. Such triple importunities do occur, but not often. By such means the parents keep the nest scrupulously clean for three weeks.

The fecal matter is enclosed in a tough white sac that will withstand much rough handling without breaking. When the young are from fifteen to eighteen days of age the weight of these dejecta is the greatest. One of these weighed 146 grains, from a nestling of 1666 grains, another of 156 grains from a bird of 1908 grains, and another of 207 grains from a bird of 1828 grains. Statistics of this period of their lives show that each nestling is fed about once an hour, and the nest is cleaned for it once in two hours. When fledgelings begin to move about the enclosing sac is no longer formed. With the Flicker it disappears gradually; from the time they commence to climb the excrements decrease in size to about thirty grains, and one or two are dropped by each fledgling in an hour. The parents struggle heroically with the new conditions, but nature is against them. By the time the young take possession of the entrance hole they cease entering the nest at any time. But the tidiness of the parents does not extend to the ridding of the nest of the egg-shells which are rarely carried out on the day of hatching; they may lie a week before they are taken out, or are broken into tiny fragments.

Until 1909 the only menace to young Flicker life was a plague of lice. An infested English Sparrows' nest had been

routed from their nesting place shortly before a pair of Flickers settled there. They had reared a lusty brood to about their eleventh day, when the second generation of the plague, introduced by the sparrows, broke out. There were some chicken lice, but of chicken mites (Dermanyssus gallinae) there were myriads. Drastic measures were necessary: the nest was scalded with boiling water, then treated with a soap and kerosene emulsion. Daily the little Flickers were hand picked for vermin, and dusted with sulphur until the plague was abated.

This year trouble began because of three very cool days when the temperature did not rise above fifty-five degrees, and because there was a nestling twenty-nine hours younger than the eldest one. Flickers, like other birds, feed more the young that receive the food most readily. The youngster that has the widest mouth, or can suck the hardest gets the lion's share. Jostled to one side the baby of the brood soon became so weakened by the cold and the lack of food that it would fall over in its attempt to seize the parent's bill; before it could rise again perhaps the meal had been served. When it did secure the bill it was so weak it could not suck with a strong pull and was dropped by the parent in order to feed those that took the food with greater ease. From cold and starvation the baby died, aged four days.

The next morning one of the twins was passing through a similar experience. It was found very cold and straightened out in the rigor of death, but gasped a little when taken in the hand. It was carried into the house to the fire and warmed thoroughly; when returned to the nest it was too weak to hold the bill after grasping it, and fell back unnourished. Then it was that a human will rose up against what has been termed Providence, which in plainer English is often merely parental stupidity and indifference among mankind as well as among birds. Earthworms were dug, beheaded, and washed for the little starveling, for which it eagerly opened its mouth, but it could not swallow until the worm was started down its throat by means of the bent end of a wire hairpin. This was true of

the strongest of the Flickers: they made no effort to swallow until the hairpin, to the length of an inch or more, had been thrust down their throats; upon this they would suck vigorously with a loud smacking noise; but even then it was an onerous task to feed them, for earthworms, even when decapitated, are very sensitive about the order of their going, and positively refuse to back down a young Flicker's throat.

This year the young of the brood were named from the color of the cotton string each wore upon its left foot as a distinguishing mark. Very briefly the history of raising little Redfoot from death's door is this: After a long hard struggle in the feeding of the first worms it was sufficiently nourished to be returned to the nest, still it stood slight chance in the contest against the stronger ones. In this disadvantage Grayfoot, the other twin, shared; therefore the other nestlings were frequently taken from the nest and fed earthworms giving the twins opportunities to gain the whole meal. Later a better scheme was devised; by introducing a hand into the nest Redfoot was held in readiness for the return of Father Flicker, and by offering Redfoot's mouth to him first, the little one received all it could take. From extra attention through six days Redfoot made such rapid growth that it was able thereafter to hold its own, and the figures of the record show that as far as weight is a requisite it went forth into the world as well prepared as any.

On the warm, pleasant day following that of the successful resuscitation of Redfoot both twins had received extra feedings from the father, and could hold on to the bill like little leeches; after the daily weighing they were occupying the nest by themselves for a few minutes, when the mother came in. If alienists were called in to pass judgment upon what followed I am sure they would pronounce it a case of "brainstorm." Certainly it bordered on the extraordinary; probably there was a shock to the mother's nervous system caused by the absence of the rest of the brood, however it may have been she very roughly shook the twins about as they held tightly to her bill; then

she stopped feeding, solicited an excrement, obtained and ate it, after which she began feeding again—an unheard of thing to do—then with Grayfoot hanging to her bill she dashed out of the nest. Possibly she was alarmed by some noise, but I heard none. On the preceding day mistaking her arrival for that of the father I began to open the trap door whereupon she flew out like a flash. For the hapless little creature the ground in ever widening circles was searched fruitlessly during several hours, scarcely a leaf remaining unturned; if it was not killed by its fall to the earth, it perished most miserably.

The study of former Flicker nests revealed the fact that it is the male bird that shows the fearlessness and devotion that we are wont to find more prominent in the mother in most species. Until the cases of starvation in the nest of 1909 occurred great pains had been taken not to disturb the natural activities of the nest; only in taking out and returning the young at weighing time did any one so much as show a hand. At such times the father, eager to return to brooding, frequently came down and touched the hand. This year it was decided to let the hand touch him. To patting and stroking he fearlessly submitted although evidently not relishing it. He suffered the hand to poke under him in taking and returning the nestlings and finally he did not shrink from it when it held up one of the twins for him to feed. This so called tameness, which more truly is the engulfment of fear by the overwhelming instinct to brood and care for the young, gradually disappeared, and by the time the young ceased to need brooding he was as timorous as before. His timidity, however, was far less than that of any other Flicker that has been a tenant of the barn.

Generally the sounds that aroused fear in this species were made by some one back of their nest, yet the bird always sought the hole and looked for the cause of alarm outside. After two seasons of experience with the five-fingered terror that entered the hand-hole so often, and removed their young, they failed to learn to look for any disturbance from that direc-

tion. Another illustration similar to this is the careful inspection of the hole before entering it at night, a Screech Owl or other enemy might be lurking there, and experiences through millions of generations, have created an instinct of caution akin to that racial instinct that leads human beings to search for the hidden enemy, the man under the bed.

It has already been mentioned that this year the male Flicker covered the eggs every night; he also staid with the young every night until they were three weeks old, brooding all of them until nearly two weeks of age, when they began pressing their breasts against the side of the nest, and he could cover the tails of two or three only, after which for two or three nights he sat upon the bottom of the nest apart from the young; then for four nights he hung upon the wall of the nest near the hole; thereafter he staid with them no more. The date of this desertion is coincident with the fledgelings' attainment of the entrance hole, which is the time the parents begin to fail to keep the nest perfectly clean. The parents fed so late in the evening that it was often impossible to identify the brooding bird without the aid of a flash-light lantern; this did not disturb him and he sometimes slumbered on regardless of it.

Pronounced individual characteristics could be recognized in the fledgelings; Blackfoot and Whitefoot were over-bearing little gluttons; Pink was the pert one of the brood; Blue was a spunky little creature, the hardest biter of all; Redfoot was timid and demure, perhaps the early ordeal of cold and hunger had a sobering effect on it. As models for drawing or painting the little Flickers are the best posers of any species I have tried. They have posed for their pictures from one to two hours on occasions when there has been scarcely a movement other than the winking of their eyes.

As the eggs hatched in the order in which they were laid, so the fledgelings went forth in the order in which they were hatched; Blackfoot early in the morning of their twenty-sixth day, Whitefoot and Pink late that afternoon. The next day the father brought at least one meal to Blue and Red-

HURLING A DERISIVE YELP

foot, but most of the time they fasted. Late in the afternoon Blue flew from the nest, leaving Redfoot to spend the night alone.

The next morning Redfoot still clung to the hole, although good strong branches swung invitingly only four feet away. For two months and a half the Flickers' nest had claimed more than its share of attention. Of the twenty-five species that have been found nesting on our grounds, more than half of that number had nests there this year. Many of these were advantageous subjects for study, and were demanding attention on that morning of June 30 while the little Flicker timidly lingered. Somewhere in the tree-tops was Blue and the two answered call for call. The hand might still caress the form of the little bird as it hesitated to make the frightful plunge. Finally, at nine o'clock and eight minutes, standard time, there was a flash of feathers, light streamed through the erstwhile darkened hole, for the wilderness of green had enfolded little Redfoot.

Both Whitefoot and Blue were seen and identified on the mornings following their departure from the nest. For six days Redfoot remained in the tops of the maples; sometimes it could be heard crying for food, and sometimes a parent could be seen trying to coax it away. On the morning of July 5 both parents were seen to leave its neighborhood, and it soon flew to an old apple tree, then along a fence: this was its first excursion. Several times thereafter it was identified by means of its crimson badge. For a few weeks all was very quiet in Flicker-land. On July 22 weaning time must have been near at hand, when the parents appeared followed by three youngsters, and one begging for food was pecked a decided refusal by the mother.

On the nights of the eighth, ninth, tenth and thirteenth of August a young Flicker roosted in the old nest box. On two nights in July and two in September the father occupied the west hole. Possibly it was the unusual dryness of the summer that caused him to desert his old lodging-place. I be-

lieve him to be the timid Flicker that began roosting in the west hole in August, 1906, but soon changed to the east hole: that he came again the next summer, and before the middle of July had cleared out a boxful of trash carried in by English Sparrows, but did not begin to roost there until August 3, then, excepting a few nights, was a regular lodger until September 29. By the end of that season he had become quite fearless.

Of all our birds the Flickers are the earliest to retire at night, sometimes going to their lodgings an hour before sundown, the customary time being about a half hour before sunset. Generally they go out soon after sunrise, but on cool autumn mornings they have been known to linger much longer. During a rainstorm in the middle of the day they have been seen to seek their apartments, also in fine weather they have been found there enjoying the seclusion thus afforded. It sounds like a simple matter to say that barring about two dozen nights a certain Flicker roosted in the barn every night from April 19 to October 2, yet this ascertainment involved an examination of the holes from the outside once every evening for six months, sometimes three or four times if the visit be made too early, if too late then a loud clapping of the hands may be insufficient to wake the heavy sleeper, and a sharp blow on the barn wall or a continuous bombardment with any convenient missiles may be necessary to force the lodger to show himself. To examine the boxes from the inside too greatly disturbs the birds. Many unsuccessful attempts were made to see just where and how the Flicker roosted in the box; at last the fearless male furnished the much sought opportunity. Not far from the hole he clung to the upper edge of the siding, and slept with his head turned backward, his bill resting in his interscapulars.

In the summer of 1908 three Flickers roosted in the barn; the one in the east hole was timid, making it difficult to learn of his movements; however, it is certain that he went to roost there at least half of the nights from July 12 to September

25. The next spring a bird of corresponding behavior returned to this hole on April 12 and continued his roost there for almost a month. The bird in the south hole was a regular lodger from the seventh of August to the first of October, excepting two nights when he was frightened away. The occupant of the west hole was the father of the brood raised in the south box, where he took lodgings on April 15 and stayed there the greater part of the time until the young ceased to need his care. This box was cleaned thoroughly as soon as the young had gone out, but apparently it was regarded as the nursery, and not as a sleeping apartment by this Flicker, who returned to his old quarters in the west end on the sixth of July, preferring it to the cooler place in the east end. On some hot evenings he must have found there a temperature of one hundred degrees, the thermometer having shown a mark nine degrees higher two hours earlier. Before July 20 he had failed to come in on four nights, after that he came every night until that of October 2. He was there as usual on the evening of the first of October, whether he began his southward journey at some time in the night or at an earlier hour than he was accustomed to go out, no one can tell. He wore no tag, therefore gave no one a pretext for killing him; he returned in safety the following spring, and this, it is hoped, he may continue to do for many years to come.

FLICKERS IN 1910.

Some points of interest in the summer life of the Flicker, omitted from the preceding paper, together with a resume of the history of this species for 1910, are given in the following pages.

In this portion of northern Iowa the young Flickers meet with few destructive enemies and a goodly number go southward every autumn, yet there appears slight, if any increase, in their numbers when they return in the spring. To each of the old nest sites there returns a pair; these nests in my immediate neighborhood are about a quarter of a mile apart:

outside of the villages every farm-yard, that has suitable trees, usually furnish a home for a pair, but as there are only two or three farms upon a section of land the houses average about a half mile apart. In placing themselves for the summer how large a space does a pair demand?

To provide more roosting places, also to see if more than one pair of Flickers could be induced to nest on our grounds the nest-boxes in the barn have been increased from three to seven. Three springs ago a suitable box was nailed upon a willow tree that stands about twenty-five rods from the barn, and the following spring another was placed in my bird-blind, which is situated near the willow tree. When the Flickers returned in 1910 the last mentioned boxes were occupied by a nesting Screech Owl and her mate, thus once more reducing accommodations to the boxes in the barn, where, as hitherto, but one pair nested.

One determining factor, perhaps the principal one, in the spacing of their homes may be the area necessary for their food collection. The places they usually frequent for food are pasture lands and newly mown fields. With binoculars I have followed the flight of a parent Flicker to the barn from a pasture nearly a half mile distant, while far too many ant-hills existed near at hand. This choice of open and closely cropped fields for feeding may be the chief influence that leads them to seek prairie homes, although thousands of wooded acres stretch along the Mississippi River, their western border being but two miles to the east of us. Besides our barn the only known buildings in the neighborhood inhabited by this species are an ice house, used for nesting, upon a farm three miles distant, and the amphitheater on the county fair grounds, used for roosting, a quarter of a mile away.

The advent of the first Flicker in 1908 was on March 26: for the following spring it was on April 4, while this year it occurred on March 23, and eight days later three of them went to roost in the barn. Among them the tame old male

could not be found; his last journey may have been the long one from which none return. It is hoped that he died full of years, as he certainly did full of honor. The greatness of the debt of gratitude due him was not fully realized until the timidity of his successor made it apparent. The wildness of this bird precluded the former freedom of nest study: and his offspring, either from heredity or example were wilder than any brood of previous years.

The courting in 1910 was conducted by the males, and was a very inconspicuous affair. The mother of the nest is believed to be the same as that of last year. She bore no distinguishing marks, but her familiarity with the place and the readiness with which she took up her roosting quarters in the old west box pointed to this conclusion. The four new boxes had been placed in the southwest corner of the barn, occupying a space that might have been enclosed in a tree two and one-half feet in diameter. The entrances to two of the boxes were on the south side and the others on the west. In the lower box upon the south side roosted the male before the eggs were laid. As has been related the tame old male of recent years was a masterful fellow and rather insisted that the laying should be done in his box. This year the eggs were deposited in the box of neither parent, but in the lower one of the new boxes opening toward the west—a box in which there had been made no demonstrations of choice before the laying began. Here the male at once took up his abode and later performed the usual duties of incubation and brooding.

The first egg was deposited on May 5, a date ten days earlier than that of any year except 1906. On the morning of May 9 the hour of deposition of the fifth egg was six o'clock and ten minutes, that of the sixth egg was five o'clock and fifty-four minutes on May 10, and of the seventh was five o'clock and forty minutes on the following morning. The morning the eighth egg was laid the mother went to sleep several times upon her nest, then sat outside the nest upon a

perch; thinking that the clutch had been completed the watch was discontinued a few minutes after six o'clock. The next morning the nest was not visited until a late hour, hence it was not due to any known disquietude that the female neglected her own nest and laid her ninth egg in the box above, having its entrance fourteen inches to the right and above her nest: there the egg was allowed to remain for nearly a month, when it was probably eaten by one of the pair.

Five of the eggs hatched upon May 22, making a period of nine days from the laying of the last egg, a shorter period than that of any previous nest except that of 1905. Since incubation of a somewhat inconstant nature begins upon the day the sixth egg is laid it was a bit of good fortune that it was the female, instead of the timorous, complaining male, that was at home when the sixth egg broke open at two o'clock and eight minutes in the afternoon of May 22, making its period of incubation twelve days, eight hours and fourteen miuntes, which was exactly two minutes longer than the incubation period for the sixth egg in 1909. The order of the hatching was irregular, the second egg being the fourth to hatch and the first one last.

The number of young reared in these barn nests has invariably been five or six. None died in the nest until 1909, infertile eggs reducing their number to the above figures. This year the last two Flickers hatched, lively little fellows, that struggled hard for food, but apparently received none, died from starvation at the end of their second day. That the father was a poor forager is attested by the daily average of weights of the brood, which, during the latter portion of their nest-life, was lower than any previous records; nevertheless the young began to leavē the nest when twenty-five days old, which is earlier than some broods leave. The smallest nestling lingered two days longer; its stay might have been of still greater length if unintentionally it had not been frightened out of the nest about noon of June 18.

Some seasons the parents take their young away from the neighborhood as soon as possible, but in others, as was the case this year, they remain constantly about the place for several weeks until the family ties are loosened. These ties do not appear to be entirely broken during the rest of the summer, there being times when apparently the whole family has a joyful gathering on the roof of the barn, or in the top of a dead willow tree. Again just before their hour for going to roost four or five of them, having found a luxurious bed of dust, disport themselves therein with evidently as keen enjoyment as a duck finds in water. Flickers, like other members of the Woodpecker family, have little use for water. During many hours, all of which taken together would amount to weeks I have watched from a blind a pool of water much frequented by the birds for drinking and bathing purposes. Near it stands the dead willow visited daily by Red-headed Woodpeckers and Flickers; there the former have never been seen to drink, and the latter on two occasions only. The first time it was the tame old male that backed down a fence post to the surface of the water and drank while clinging to the post.

Aside from occasional rather curious exhibitions of courtship the late summer interests in the Flicker center about his food habits, his moult, and his roosting. All seven boxes in the barn have been used for roosting purposes this year, only five, however, at one time. For the first time a female has had a chance to occupy a box after the nesting season was over: formerly she was driven out by the males. In its summer roosts the Flicker is one of the most immaculate of lodgers. When he leaves for the south after several months of occupancy of a box no droppings of any kind can be found there except some of his moulted feathers, remaining as little tokens of the excellent bird that spends just half of the year as a sharer of our home. But in the nesting boxes some signs of the Flicker's inhabitancy are permanent: these are the places hewed by their chiseling bills. In the last box

used this was very slight, in the south box where they nested for two seasons a hole as large as a half dollar was made through the half inch boards, which would have formed an opening into the barn if it had not been for the batten back of it. It is in the old east hole occupied for so many years that this hacking is most prominent. Below the entrance hole the siding of the barn in places has been hollowed out to half its original thickness, and the board parallel to the rafters, that helped form the cavity, has been cut half way through in that portion of it that is opposite the hole. Evidently this was done to enlarge the space; the other cuttings probably are the result of the bird's natural tendency to enlarge its nesting chamber while sitting, or it may originate from the bird's habit of hammering with its bill at such times. This hammering, which is often heard before the eggs are laid, seems to be a call, and when done while the bird is incubating it may be for the same purpose, since it appears to be indulged in toward the close of a long sitting, when the bird shows signs of restlessness by frequently going to the hole to look out.

FLICKERS FROM THE BROOD OF 1903

Weights of Flickers
Brood of 1908

Egg		No. 1	No. 2	No. 4	No. 5	No. 6	No. 7	Aggregate weight of brood	Average daily weight
weight of egg - fresh		GRAINS 98	GRAINS 106	GRAINS 106	GRAINS 109	GRAINS 107	GRAINS — —		
weight of egg - hatching			95	98	101		100		
					JUST HATCHED				
1st to 28th day in life of the Flickers	1	89	89	89	85	84	84		
	2	171	159	155	154	129	120	888	148
	3	238	215	213	211	200	180	1257	209
	4	338	331	329	310	309	292	1909	318
	5	486	434	429	409	400	397	2555	425
	6	578	576	568	550	537	503	3312	552
	7	760	742	678	660	628	611	4074	679
	8	940	859	767	743	739	710	4758	793
	9	1026	911	867	850	830	825	5309	884
	10	1207	1045	1042	1008	992	901	6195	1032
	11	1427	1318	1239	1151	1116	1005	7256	1209
	12	1540	1321	1313	1218	1194	1140	7726	1287
	13	1828	1324	1303	1300	1223	1143	8121	1353
	14	1619	1506	1380	1186	1079	1006	7776	1296
	15	1715	1565	1500	1394	1315	1143	8634	1439
	16	1629	1568	1526	1515	1377	1248	8863	1477
	17	1766	1685	1657	1631	1501	1247	9487	1581
	18	1775	1670	1669	1657	1555	1506	9832	1638
	19	1767	1707	1699	1640	1550	1500	9863	1643
	20	1834	1830	1756	1565	1558	1436	9979	1663
	21	1805	1756	1730	1658	1564	1442	9955	1659
	22	1960	1944	1774	1721	1569	1540	10508	1751
	23	1821	1806	1780	1754	1686	1565	10412	1735
	24	1935	1878	1744	1701	1669	1557	10484	1747
	25	1859	1830	1829	1694	1682	1645	10539	1756
	26	1846	1825	1755	1736	1642	1581	10395	1732
	27	1679	1575	1544	1535	1503	1500	9436	1572
	28				1530	1430	1419		

Apothecaries' weight was usod and for convenienee all weights were kept in grains. The young of this brood were not marked, consequently their weights were placed in the order of their size.

Weights of Flickers
Brood of 1909

Egg		No. 1	No. 3	No. 5	No. 6	No. 7	No. 8	No. 9	Aggregate weight of blood	Average daily weight
weight of egg - fresh		grains 110	grains 108	grains 108	grains 106	grains 109	grains 111	grains		
weight of egg - hatching			95	96	93	96		95		
		Black-foot	White-foot	Pink	Blue	Gray-foot	Red-foot	Baby		
1st to 28th day in life of the Flickers.	1	85	85	83	84					
	2	197	173	164	156	117	116	83	1006	143
	3	286	257	244	210	193	176	113	1479	211
	4	426	370	346	332	302	296	202	2274	327
	5	428	413	405	362	354	324	230	2516	358
	6	606	516	500	422	396	314	184	2938	419
	7	666	534	489	440	404	303		2836	472
	8	855	725	643	623	554	413		3813	625
	9	1104	847	830	712		697		4190	838
	10	1260	1118	1154	1048		936		5516	1103
	11	1410	1267	1218	1210		1081		6186	1237
	12	1604	1330	1297	1286		1208		6725	1345
	13	1647	1590	1540	1410		1352		7539	1507
	14	1680	1602	1594	1436		1511		7823	1564
	15	1855	1790	1782	1634		1666		8727	1745
	16	1882	1832	1834	1574		1730		8852	1770
	17	1958	1966	1765	1635		1635		8949	1789
	18	1964	1990	1837	1746		1731		9178	1835
	19	1929	2105	1867	1732		1783		9416	1883
	20	2100	2016	1968	1808		1902		9794	1958
	21	2012	1966	1824	1698		1855		9355	1871
	22	2115	2037	1920	1866		1969		9907	1981
	23	2150	2079	1954	1806		1871		9860	1972
	24	1980	1920	1858	1846		1954		9558	1911
	25	1950	1975	1869	1788		1900		9482	1896
	26		1990	1794	1823		1745			
	27				1640		1811			
	28						LEFT NEST			

The egg of the twins here marked No. 7 hatched first, hence thought to be the earlier egg. Red-foot left the nest before it was weighed on its twenty-eight day.

Weights of Flickers Brood of 1910

Weight of eggs - fresh - No.1 - 97grs. No.2 - 104grs. No.3 - 109grs. No.4 - 113grs. No.5 - 112grs. No.6 - 113grs.								Aggregate weight of Brood	Average daily weight
		GRAINS	GRAINS	GRAINS	GRAINS	GRAINS	GRAINS		
1st to 28th day in life of the Flickers	1	101	100	88					
	2	200	194	177	169	150	112	902	150
	3	295	279	270	267	175	137	1423	237
	4	418	396	375	340	275	199	2003	334
	5	525	514	488	480	400	327	2834	472
	6	686	603	579	554	505	390	3317	553
	7	796	734	719	695	637	490	4071	678
	8	871	832	795	793	647	601	4539	751
	9	968	964	945	920	748	681	5226	871
	10	1183	938	1026	1078	906	880	6011	1001
	11	1242	1227	1204	1133	976	969	6751	1125
	12	1385	1248	1241	1256	1244	1175	7549	1258
	13	1429	1271	1274	1455	1182	1140	7751	1291
	14	1531	1543	1375	1342	1173	1120	8084	1347
	15	1745	1634	1529	1495	1417	976	8796	1466
	16	1725	1568	1627	1617	1302	1148	9187	1531
	17	1595	1625	1613	1523	1519	1265	9140	1523
	18	1614	1559	1426	1581	1615	1270	9065	1510
	19	1639	1579	1535	1563	1481	1305	9102	1517
	20	1846	1656	1614	1665	1513	1396	9690	1615
	21	1800	1639	1625	1616	1440	1486	9606	1601
	22	1687	1648	1672	1565	1483	1492	9547	1591
	23	1722	1676	1665	1694	1519	1536	9812	1635
	24	1758	1685	1729	1653	1492	1479	9796	1632
	25	1725	1670	1643	1627	1571	1457	9693	1615
	26						1462		
	27						1494		
	28						LEFT NEST		

The smallest one left the nest on its twenty-eighth day while attempting to take it out for its daily weighing. The young of this brood wore distinguishing marks.

THE BIRDS OF CEDAR POINT AND VICINITY.

BY LYNDS JONES.

221. *Oporornis formosa.*—Kentucky Warbler.

At best an irregular spring migrant. Probably the venturesome males which over-reach the migrating host during the height of the fever of spring migration retire southward when no mates appear. Records for the immediate vicinity of Oberlin are: May, 12, 1903; May 15, 1906; May 13, 1907; May 14, 1908; one on each occasion. Cedar Point sand spit records are April 27 and May 23, 1904; May 13, 1907. two birds; these records are actually for the marsh at Rye Beach, at the extreme east end of the series of marshes. The birds have always been found in wet or swampy situations, always near the ground on some fallen wood. The increasing frequency of occurrence in later years gives me hope that this interesting warbler may ultimately become a summer resident and enliven our woods with his rich melody.

222. *Oporornis agilis.*—Connecticut Warbler.

A spring migrant in small numbers, never having been noted in fall. The migration dates fall within the last two weeks of May, with the exception of May 7 and 9, 1904. These early dates would indicate that this warbler belongs in the early May group rather than among the latest of the migrants. I have invariably found it in places of which the marsh border of the sand spit is typical—in the vicinity of water. It has been heard singing but once, then faintly.

223. *Oporornis philadelphia.*—Mourning Warbler.

A spring migrant in small numbers, but decidedly more numerous than the last species. The median date of arrival for nine years is May 11, and of departure northward, May 25. It has never been found in fall. The typical habitat of this bird while it tarries with us is a low, wet place, thickly grown with rose bushes. Along the sand spit it frequents the button bush thickets along the marsh border. It seldom sings during its passage.

224. *Geothlypis trichas brachidactyla.*—Northern Yellow-throat.

Common all summer in growths which accompany wet or damp situations, whether the growths be of grass, weeds, reeds, or bushes. The marsh border of the sand spit, and the grassy "islands" are therefore typical habitats. The median date of arrival is April 30, the range being from April 25 to May 2. The median date of departure is September 23, the last being October 1, 1906, at the

Cedar Point sand spit. The bulk is gone by the middle of September usually. Nests have been found May 30. While there is considerable variation in the rendition of the song, each bird being able to vary its song to a considerable degree, the song pattern is so distinctive that novices have little difficulty in learning it. As one might readily infer, this warbler is present on the larger islands where typical habitats are plentiful.

225. *Icteria virens.*—Yellow-breasted Chat.

A summer resident which is increasing in numbers year by year. Nearly every brushy tangle now harbors a pair. When my studies of the birds of the region began in 1891 it was not easy to locate a pair outside of two or three favored localities. Several pairs nest along the sand spit. Three pairs nested within twenty rods of the Lake Laboratory in the summer of 1907. The median date of arrival is May 5. My latest fall record is September 9, 1899. There were three young found in a nest on August 6, 1897. The birds become silent and apparently slip away south without attracting attention. My visits to Pelee Island have been too late in the season for it. There can be little doubt that it nests there.

226. *Wilsonia mitrata.*—Hooded Warbler.

The first record for the region is May 9, 1901, when two were found singing in the old "South Woods." None were found the following year, but since 1903, when one was found on May 9 and another on May 22, both in the "South Woods," it has been regularly recorded, seldom more than one at a time. It certainly does not remain to breed. It has been found well toward the east end of the sand spit about the middle of May. Apparently individuals do not work much westward. There are no summer nor fall records.

227. *Wilsonia pusilla.*—Wilson's Warbler.

Fairly regular as a spring migrant in limited numbers; recorded but twice in fall. It ranges along the sand spit in the bushes bordering the sand plains. On the mainland it frequents the brushy borders of woods and the smaller growths of the woods. It does not sing much during its stay. The median date of spring arrival is May 13, and of departure northward May 20, the latest spring record being June 2, 1903. The fall records are September 8, 1904, one bird; September 14, 1906, three males in high color, and two birds in immature plumage. One of the remarkable things about this region as contrasted with central Iowa, is that this warbler passed south in swarms in Iowa and is practically absent in fall here.

228. *Wilsonia canadensis.*—Canadian Warbler.

Common during the spring migrations in the more open woods, especially beech woods. Only once noted in fall. It has been common along the sand spit during each migration which I have studied there in spring. The median date of arrival is May 8, and of departure May 23. In 1901, 1904 and 1907 it tarried until May 27. The fall occurrence was September 7, 1901, one bird. It will be interesting to compare records on Pelee island with those from the Oberlin region for the fall weeks.

229. *Septophaga ruticilla.*—Redstart.

Everywhere common in the woods of the mainland, and on the larger islands, as a summer resident. In moderately large second growth beech woods it is even abundant. The median date of arrival is May 1. It is often common from the first. I have found nests with young June 1. The latest fall record is October 7, 1907, when three individuals were noted. It is not uncommon along the sand spit in the spring migrations, but is uncommon or absent in summer. I did not find any in the summer of 1907. In its passage northward it comes into towns and parks, singing almost incessantly.

230. *Anthus rubescens.*—Pipit.

Regular but seldom common as a spring migrant, irregular in fall. Always seen in flocks numbering from a few individuals to several hundred, and most often found on freshly plowed fields in spring, where it is feeding. Flocks have been seen flying over the sand spit and marsh, both spring and fall. The median date of spring arrival is May 4, but the range is from March 23, 1907, when a flock of 15 was noted, to May 26, 1899, which is the latest spring record. Fall records range from September 14 to October 19. Clearly these records are too variable to afford any clue to the usual times of migration, if there be any. Flocks of Pipits can be readily distinguished from flocks of the larks or any other flocking birds by their erratic flight and by the vertical criscrossing of the individuals of the flock.

231. *Mimus polyglottos.*—Mockingbord.

The only absolutely authentic record is of a specimen in the possession of Mr. R. E. Jump, who captured it at Oberlin, date not known. Professor Edward Dickinson, who knows the bird well, reported one seen and heard singing by him near Oberlin in May, 1908. Persistent reports of its occurrence near Cleveland, and its evident increase in numbers southward in the state, lead one to hope that it is gradually extending its range well northward.

232. *Dumetella carolinensis.*—Catbird.

Common all summer in bushy situations. It is a familiar bird in door-yards if the back lots furnish suitable breeding places. In the borders of woods it seems to prefer to nest in hawthorn trees. It is one of the most familiar birds about the Lake Laboratory, and all along the sand spit, where it nests in great numbers. The median date of arrival is April 27. The latest fall record is October 16, 1905. The most of the birds have gone south by the first week in October. It seems strange that there are still persons who regard the Catbird as a witch, and who destroy its nest and young on every opportunity. Unlike the Brown Thrasher, this bird prefers the seclusion of a tangle from which to sing. In my opinion its ventriloquil powers have been a good deal overstated. It has some powers of mimicry, but it also has its own song pattern, to which it is inclined to adhere pretty closely.

233. *Toxostoma rufum.*—Brown Thrasher.

Far less common than the preceding species, except during the spring migration along the sand spit, when it is usually almost abundant. Its proper setting in this region is an osage orange hedge-row, at least during the nesting season. It also frequents brushy woods and neglected fence rows. Along the sand spit it is pretty closely confined to the bushes, nesting about the Lake Laboratory. The median date of arrival is April 11, but there are four March records, the earliest being March 22, 1902 and 1904. One individual remained in Oberlin all winter 1906-7. The latest fall date is October 16, 1905. It has not seemed to be present along the sand spit with the advent of fall weather, much to my surprise. Its spring arrival is heralded by a burst of song, which the bird pours forth from the topmost point of an osage orange plant. In snowy weather it retires to the brush and becomes silent. Nests are most numerous in the osage orange hedge-rows, but the birds occasionally build elsewhere. One pair successfully reared a brood of five in the midst of a brush heap in a hog pasture, in 1909.

234. *Thryothorus ludovicianus.*—Carolina Wren.

The first authentic record for this wren is September 6, 1899, at Chance Creek, in the eastern part of the Vermilion quadrangle. Since that time there has been a gradual increase, until today there is no river gorge which does not harbor several pairs. It has been found in winter and spring on the sand spit, particularly about the resort grounds, but also eastward and near the Lake Laboratory. I have found it on East Sister and Pelee Islands, where permanent colonies seem to have been established. It has not yet become nu-

merous enough to dare breeding about human habitations, but each spring it is heard singing in Oberlin. Three pairs regularly nest in the Vermilion river gorge at Birmingham.

235. *Thryomanes bewickii.*—Bewick's Wren.

May 22, 1909, one was heard singing at Berlin Heights by Rev. W. L. Dawson and the writer. There are other conjectural records, one for Elyria and one for Oberlin, but on neither occasion were the circumstances sufficiently favorable to warrant positive statements.

236. *Troglodytes aedon.*—House Wren.

A common summer resident in orchards, but much less common in woods and about barns in town. The median date of arrival is April 24. It seems to leave the vicinity of its nesting places rather early in September, but I found it in considerable numbers along the marsh border of the sand spit as late as October 15, 1906. There it was acting so much like a Winter Wren or one of the marsh wrens that one had to be sacrificed to make identification satisfactory. There is no bird more useful in an orchard than one of these wrens, and owners of orchards will do well to either leave hollow limbs for them to use, or supply boxes or other receptacles in which they may build

237. *Nannus hiemalis.*—Winter Wren.

Of regular occurrence in winter, but irregular in its fall arrival. My dates range from September 14 to October 18 for firsts. The median date of spring departure is May 8, but the latest record is May 17, 1898. The bird seems to prefer an old brush heap or a fallen log which is partly covered with brush and vines, or is hollow. On the sand spit it is found near the marsh border among the bushes. I have never found it there in the dead of winter. It sings sweetly in its brushy retreat in spring, or scolds in a tempest of harsh rattling calls.

238. *Cistothorus stellaris.*—Short-billed Marsh Wren.

This little wren escaped notice until May 12, 1900, when one was found in a small swamp south of Oberlin, and another one in the quarry region north. Since that time it has been found in small numbers in the grassy borders of the marshes at the lake, including Cedar Point, all summer. It arrives about the first of May. I have no fall or late summer records. As indicated, its proper setting is the coarse grass which grows at the borders of marshes, or in low, damp situations.

239. *Telmatodytes palustris.*—Long-billed Marsh Wren.

Abundant in all of the larger marshes all summer, and a few pairs are to be found in most of the smaller marshes. This wren belongs to the cat-tail zones of the marshes, always placing its nest above water among the cat-tail stems and reeds. The median date of arrival is April 22 at Cedar Point, where the only reliable records can be secured. I found it there on November 19, 1906, and October 21, 1907. I am of the opinion that it remains in the marshes until the approaching cold forces it southward by reason of scarcity of food. It is just as characteristic of the marshes in summer as are the marsh vegetation and water.

240. *Certhia familiaris americana.*—Brown Creeper.

Often common in the migrations, regular in small numbers all winter. The spring migration occurs about the 20th of April. The median date of spring departure is April 29, and of fall arrival, October 2, but fall records are too variable to make positive statements possible. It has been found in considerable numbers in both migrations along the sand spit. The proper setting for this bird is the deeper woods in winter, and any place where there are trees during the migrations. It wanders about with the troops of small birds in winter.

241. *Sitta carolinensis.*—White-breasted Nuthatch.

Common all the year wherever there are trees. It is a regular visitor to the lunch counter in winter, and is a most efficient help in the orchard at any time of year. In winter it is usually the first of the wandering troop to respond to the chickadee call. It is present, but not numerous, on the sand spit at any time. I found it on all of the larger islands.

242. *Sitta canadensis.*—Red-breasted Nuthatch.

Decidedly irregular in its occurrence. It is usually tolerably common on the wooded parts of the sand spit in the spring migrations, and usually present all winter on the mainland, in small numbers. It is sometimes common in the migrations in April and early May, and again in early September, but more frequently is represented by a few individuals. It is to be found in the deep woods in winter, anywhere where there are trees at other times.

243. *Bæolophus bicolor.*—Tufted Titmouse.

Tolerably common over the whole wooded parts of the mainland region, all the year. I have not found it on the islands. It is found on the sand spit in small numbers. In winter it ranges along the sand spit, but in summer seems to be confined to the west end.

It is less frequently seen in town than the next species in winter, but singing males regularly visit the college campus during the courting season. This is one of the species always comprising the winter troop of small birds in woodlands. It readily responds to its imitated calls, but is more wary than the Chickadee. It seldom visits the lunch counter in winter.

244. *Penthestes atricapillus.*—Chickadee.

Common over the whole wooded and inhabited parts of the region all the year. It is less common on the sand spit during the coldest part of the winter. It nests in orchards where suitable nesting sites are left. Its confiding habits make it the favorite among our resident birds. The lunch counter is patronized with thanks and the birds proceed to pay their way by visiting the orchard and destroying the eggs of the apple pests.

I have never been able to detect any migration of these two titmice in this region at any time of year. They are decidedly local in their preferences, and can be located even when nesting. On numerous occasions I have started them from their night roost in the thick of a leafy grape vine in midwinter

245. *Regulus satrapa.*—Golden-crowned Kinglet.

Common during the spring migration, less often common in the fall; wintering in small numbers in cemeteries and other places where there are evergreen trees. In the migrations it occus over the whole region where there are trees and bushes. It was common September 24 to October 23, and a few to November 5, 1906; common March 25 to April 29, 1907, on the sand spit, but I have not found it there in winter. The spring migration occurs the first week in April, and the bulk has departed before the first of May. My latest spring date is May 10, 1907. The fall migration occurs about the first of October, the earliest being September 24, 1906. The bulk has gone south by the first of November.

246. *Regulus calendula.*—Ruby-crowned Kinglet.

Common in the spring migrations, less common in the fall. It is found with the last species, but tarries longer in the spring. I have never found it in winter. The median date of spring arrival is April 13, the earliest being March 25, 1905. The bulk leaves about the first of May, but individuals tarry until May 18 (1907 and 1908). The fall migrations occupy the whole of October. Extreme dates are September 24, 1906, and November 3, 1901. Sometimes these little birds literally swarm over the bushes in the yard and among the apple trees. Rival males display the hiden flame

until one imagines the whole head is fire red. At other times it is hard to see the concealed red at all. Those who have difficulty in distinguishing the immature kinglets from some of the plainly colored small warblers may do so readily by noting the nervous flitting of the wings of the kinglets.

247. *Polioptila cærulea.*—Blue-gray Gnatcatcher.

Regular as a summer resident, but not common. It is partial to beech or oak woods during the nesting season, but may be found anywhere in woodland where the growth is not too dense, during the migrations. It has been common on the sand spit during the days of heavy migration, more common eastward where the width of forest growth is less. The median date of migration in spring is April 23, but the earliest is March 29, 1907. I have never seen this bird after August 15 (1899).

248. *Hylochichla mustelina.*—Wood Thrush.

Common in woodland all summer. It is also a familiar bird in Oberlin back yards and orchards, where it nests. It seems to prefer thick second growth woods, or the lower borders of larger woods. It has always been common during the spring migrations on the sand spit, but it nests sparingly west of the resort grounds, near the Lake Laboratory, and on one of the considerable widenings of the sand spit a half mile east of the Lake Laboratory. The median date of spring arrival is April 27, the earliest being April 10, 1904. My latest fall record is September 24, 1906. I have not found it on the sand spit in late summer and early fall, nor have I noted any southward migration of considerable numbers, which would be the case did the more northerly breeding birds pass southward across this region. Nests containing eggs have been found by May 22. This bird is *par excellance* the nightingale of our woods. To its singing in Oberlin is probably due more than to any other one thing the awakening interest of middle-aged people in the bird life of the town. One can hardly remain indifferent to his surroundings after having heard the song of the Wood Thrush.

249. *Hylocichla fuscescens.*—Wilson's Thrush.

Common in the spring migrations in suitable woods, a few remaining all summer to breed. The Cedar Point sand spit does not seem to furnish the necessary conditions for this thrush. It has been met with there in small numbers during the migrations, but has never been found in such numbers as to be called common. The typical habitat in this region is a woods of tall trees which stand close enough together to furnish a complete shade, with a little un-

derbrush or berry bushes. Woods of this character are not numerous. Its associations are with the Wood Thrush and the Oven-bird in summer, and with the Hermit and Wood Thrushes in the spring migrations. The median date of spring arrival is April 29, the earliest record is April 20, 1899. I have no reliable fall records. There has never been any fall movement noted.

250. *Hylocichla aliciæ*.—Gray-cheeked Thrush.

Prior to 1898 the problem of distinguishing this thrush from the next had not been solved. Since that time it has been found fairly common in the spring migrations, but irregular in the fall. It has always been found associated with the next species, and the general remarks will be given under that heading. The median date of spring arrival for seven years is May 2, and of departure, May 19. Fall records indicate that it returns near the first week of September and remains a month.

251. *Hylocichla swainsonii*.—Olive-backed Thrush.

This is decidedly the most numerous of the thrushes in the migrations, both spring and fall. Probably because of its numbers it is to be found anywhere that trees grow. The Cedar Point sand spit sems to be a line of migration in spring, and my few experiences on the chain of islands indicate that the island route is abundantly patronized in the fall. The song of this thrush is heard in town, parks, and door-yards during the stress of the migration, where the birds often swarm in the tree-tops and among the shrubbery. On the sand spit they are everywhere, and during the migration of the Sharp-shinned Hawks, suffer from the depredations of this hawk greatly. The median date of migration is, for the northward movement, April 30, the earliest being April 13, 1908; for the departure north, May 25, the latest being June 13, 1905. The median date of return in the fall is September 13, and the departure southward October 4, the latest being October 24, 1896. They usually remain common up to the day of their departure, both spring and fall. On the day of my arrival on Pelee island, August 29, there were none found, nor any the next day in spite of a careful search, but with the first faint dawn of the 31st the peculiar notes of this bird were heard, and the full light revealed hundreds of them in the bushes and everywhere in the woods. They remained thus numerous until my departure the evening of the next day, and were common on Middle and Kelley's islands.

252. *Hylocichla guttata pallasii.*—Hermit Thrush.

Always present, but not always common, during the spring migration, and practically always present during the fall migration, always in the woods or door-yards which have trees or bushes. It has been common on the sand spit in each migration that I have studied the birds there, and usually so numerous that the birds spread well over the whole of the sand spit. The median date of spring arrival is April 2, the earliest March 21, 1903; the median date of spring departure is May 5, the latest May 20, 1907. The birds usually return late in September and remain about a month. One was found in the thicket covering an old quarry dump on December 4, 1903, in the Oberlin quadrangle. This thrush seldom sings during its passage, and then apparently only the ghost of the song which is characteristic of its summer home.

253. *Planesticus migratorius.*—Robin.

Always abundant during the migrations, and common in the vicinity of human habitations during the summer. It might rightly be termed abundant in towns. It has not been really common on the sand spit in the summer, and is usually not as numerous there in the migrations as it is on the mainland on the same dates. In the spring migrations it sometimes forms into great flocks. The median date of spring arrival is February 28, the earliest for actually migrating birds being February 14, 1897. The great southward migration occurs late in October, with the first touch of winter. Since the winter of 1894-5, when the great storm in Kentucky and Tenessee killed countless numbers of this and the next species, Robins have been found in this region all winter in small numbers. Several regularly pass the winter in Oberlin. Nest building is in progress late in March, and two or three broods are raised.

254. *Sialia sialis.*—Bluebird.

It is a common summer resident over most of the region, and has been so except during the years immediately following the disastrous winter of 1894-5, when most of those which passed the winter in Kentucky and Tennessee were exterminated. During the last ten years a few individuals have been regularly found all winter in the region. They nest in the more open country in fence posts, in orchards, less commonly in the woods, and less commonly about human habitations than before the thinning. On but two occasions have I seen anything like a great migration wave, and then in the middle of March after two weeks of unfavorable weather. Then the woods near the lake shore were filled with Bluebirds, which seemed to be moving eastward along the lake

in bands of several hundred each. The median date of spring arrival is February 27, the earliest being February 17, 1897; the median date of departure is October 25. The bulk moves south about the middle of October, or with the first severe frosts. Only a few breed on the sand spit, and I have never found many in the migrations.

ONE DAY'S OBSERVATION OF NORTHERN NEW JERSEY BIRDS.

BY LOUIS S. KOHLER.

Appended hereto will be found a list of birds observed in several Northern New Jersey towns on May 26, 1910. This date in this locality is one that may be included in the last leg of the vernal migration period, and, also, one on which an observer may locate a number of species nesting. The country canvassed in securing this list includes Bloomfield, in Essex County, Mountain View, Wayne, Pompton and Pompton Plains, in Morris County, Pompton Junction and Pompton Lake, in Passaic County, and Oakland, in Bergen County. This list includes thirty-eight established residents, five late migrants and five casual visitors, making a total of forty-eight species observed.

ESTABLISHED RESIDENTS

(1) *Actitis macularia.*—Spotted Sandpiper. One seen at Bloomfield.

(2) *Accipiter velox.*—Sharp-shinned Hawk. One seen at Bloomfield.

(3) *Coccyzus americanus.*—Yellow-billed Cuckoo. Two seen along west shore of Pompton Lake.

(4) *Ceryl alcyon.*—Belted Kingfisher. Common at Pompton Lake and Pompton Junction.

(5) *Colaptes auratus luteus.*—Northern Flicker. Common at Pompton Junction and Oakland. Few found at Bloomfield and Wayne. Nest found at Pompton Lakes.

(6) *Chætura pelagica.*—Chimney Swift. Common generally. Nest and four eggs found in chimney at Pompton Junction.

(7) *Tyrnnus tyrannus.*—Kingbird. Common at Pompton Junction and Pompton Lakes. One at Mountain View.

(8) *Sayornis phœbe.*—Phœbe. Two at Pompton Lakes with nest and three eggs.

(9) *Horizopus virens.*—Wood Pewee. One at Pompton Lake.

(10) *Empidonax minimus.*—Least Flycatcher. Common generally.

(11) *Cyanocitta cristata.*—Blue Jay. Common at Bloomfield and Pompton Junction.

(12) *Corvus brachyrhynchos.*—American Crow. Common at Mountain View. Few found at Wayne and Pompton Junction.

(13) *Sturnus vulgaris.*—Starling. Common at Bloomfield. Nest with three young birds about ready to leave nest.

(14) *Molothrus ater.*—Cowbird. Abundant at Pompton Lakes.

(15) *Agelaius phœniceus.*—Red-winged Blackbird. Common at Wayne.

(16) *Sturnella magna.*—Meadowlark. Common generally.

(17) *Icteria spurius.*—Orchard Oriole. One at Pompton Lake.

(18) *Icteria galbula.*—Baltimore Oriole. Common generally. Nest and eggs at Pompton Junction.

(19) *Quiscalus quiscula.*—Purple Grackle. Small flock at Pompton Plains.

(20) *Astragalinus tristis.*—American Goldfinch. Abundant at Pompton Lakes and Pompton Junction.

21) *Spizella socialis.*—Chipping Sparrow. Common at Bloomfield.

(22) *Spizella pusilla.*—Field Sparrow. Common at Pompton Lakes. Several at Pompton.

(23) *Melospiza cinerea melodia.*—Song Sparrow. Common generally. Young birds found at Wayne, Pompton and Pompton Lakes.

(24) *Pipilo erythrophthalmus.*—Towhee. Abundant at Pompton Junction.

(25) *Zamelodia ludoviciana.*—Rose-breasted Grosbeak. One at Mountain View.

(26) *Cyanospiza cyanea.*—Indigo Bunting. Common generally.

(27) *Piranga erythromelas.*—Scarlet Tanager. Abundant at Pompton Junction.

(28) *Hirundo erythrogastra.*—Barn Swallow. Common generally. Nest and three young at Pompton Junction

(29) *Iridoprocne bicolor.*—Tree Swallow. Abundant at Pompton Lake.

(30) *Riparia riparia.*—Bank Swallow. Common at Pompton Lake. Nesting at Oakland, N. J.

(31) *Vireo olivaceus.*—Red-eyed Vireo. Common generally. Nest and eggs at Bloomfield.

(32) *Vireo flavifrons.*—Yellow-throated Vireo. Abundant generally.

(33) *Dendroica æstiva.*—Yellow Warbler. Abundant generally. Nest and three young at Bloomfield.

(34) *Geothlypis trichas.*—Maryland Yellow-throat. Abundant generally.

(35) *Setophaga ruticilla.*—American Redstart. Common at Pompton Junction.

(36) *Galeoscoptes carolinensis.*—Catbird. Common at Pompton Lakes. Several found in Oakland.

(37) *Hylocichla mustelina.*—Wood Thrush. Common at Bloomfield and Pompton Junction. Nest and three eggs at Pompton Junction.

LATE MIGRANTS

(39) *Dolichonyx oryzivorus.*—Bobolink. One at Wayne. Two at Bloomfield.

(40) *Zonotrichia albicollis.*—White-throated Sparrow. Common at Bloomfield.

(41) *Dendroica pensylvanica.*—Chestnut-sided Warbler. One at Bloomfield.

(42) *Seiurus aurocapillus.*—Oven-bird. Three at Bloomfield.

(43) *Wilsonia mitrata.*—Hooded Warbler. One at Bloomfield.

CASUAL VISITORS

(44) *Pandion haliaetus carolinensis.*—American Osprey. One at Lake Inez, Pompton Lakes.

(45) *Gallinago delicata.*—Wilson's Snipe. One at Bloomfield.

(46) *Zenaidura macroura.*—Mourning Dove. One at Wayne. Was formerly a casual resident, but quite rare now.

(47) *Vireo gilvus.*—Warbling Vireo. One at Lake Inez, Pompton Lakes.

(48) *Sitta carolinensis.*—White-breasted Nuthatch. One at Pompton Lakes.

THE END OF THE NIGHT.

It was night. No one was stirring in the village streets. A few brilliant stars gleamed from out the black sky. The late rising moon was still hid behind a massive bank of clouds piled up in majestic serenity on the eastern horizon.

I started home, afoot. It was five miles, but what cared I? Delicious memories of the blissful hours just over were

nestling among the cushions of my brain, and, often, I had walked much farther. In the fields around me and in the air above me, I could hear the calls of the night birds. Everywhere was the cry of the kildeer and the plaintive *peet weet* of the woodcock probing for worms in the wet fields. Overhead the night-flying migrants kept calling to one another; but not a bird could I see.

A light wind began to blow. I heard a wild, mournful, agonized, soul-piercing scream, followed by a miserable, high-pitched, it's-all-up-with-me groan. "What in thunder?" There was no way past but by, and I am always interested in ghosts; so I tramped on until I could distinguish the wheel of a farmer's windmill revolving with "soul-piercing" shrieks for grease.

Just at three o'clock, the moon flipped up from behind her vapory screen of clouds, and, at the same moment, a song sparrow in a bush by the roadside, woke with a jerk and started off in the middle of his song. Just why he began in the middle, I do not know, unless he had been dreaming and woke with the song on his mind, or he was still so sleepy that he could think only of the last part of it.

On I tramped, thinking of this and other things, until a robin began to carol his matutinal hymn from a fence post; the vesper sparrows chanted their matins, and the dickcissel began the monotonous rehearsal of his unmusical lays, which he repeats all through the long summer days. The cock's shrill clarion re-echoed from every chicken-coop, and the flute-like whistle of the meadowlark was the avian bugle-call for breakfast. From the woods beside the road came the energetic *wichity wichity* of the Northern yellowthroat, the earnest song of the indigo bunting, and the sleepy call of the wood pewee. The sky grew lighter and lighter, and all the robins of the neighborhood seemd to have united for one grand concerto, assisted by the tuneful song sparrow and monotonous chippy. As the regal sun swung up over the horizon in gorgeous state, it was greeted by a tinkling burst

of the golden song of the bobolink. Then joined the chorus the full-voiced melody of a farmer calling his swine. And the day was begun.

Ada, Ohio. WHEELER MCMILLEN.

THE BOBOLINK.

The metallic *tink* of the bobolink,
As he passes o'er at night,
Is the signal gong of the coming throng,
In their long-continued flight,
From the tropical rains of Brazilian plains
To their northern nesting site.

The manifold charms of buckeye farms
Have drawn him away from the land
Of beautiful flowers and verdant bowers
That were built by the unseen hand.
Soon, the fairy god's dart will pierce his gay heart,
And his little brown mate and he
Will build them a home, a glorious throne,
In a kingdom of musical glee.

In rapture he sings and the meadow-land rings
With a medley of golden notes;
They flow from his throat and onward they float
Like a fleet of æolian boats.
They tunefully tinkle as their melodies sprinkle
O'er the landscape far and near;
They jauntily jingle as they merrily mingle
With the summer atmosphere.
In sunshine or rain, ever free from all pain,
He pours forth his rhapsodies,
Over meadow and field, where with lips unsealed,
The daisies are kissed by the breeze.

Ada, Ohio. —*Wheeler McMillen.*

PRELIMINARY LIST OF THE BIRDS OF ESSEX COUNTY, NEW JERSEY.

BY LOUIS S. KOHLER.

Essex, New Jersey's most populous county, is located in the north-east central portion of the Garden State. Topographically the entire county gradually rises from the Passaic River, its eastern boundry, westward to the first and second ranges of the Orange Mountains, and beyond these low lying hills it slightly declines to the Passsic River again which also forms the western and half of the northern boundaries. At the extreme northern end of the county there is located an immense tract of marsh land which is known as the Great Piece Meadows. To this latter section the local observer must look to find the representatives of the gulls and ducks and such other water birds which are present during their seasons, as there are but three small ponds and two or three small brooks in the whole county and these are not often visited by the water birds.

The greater part of the territory here not occupied by the residential and farming districts, is covered by virgin frowths of deciduous timber with one or two small copses of the coniferous appearing in the Orange Hills.

The faunal areas represented are principally Alleghanian and Carolinian. Occasionally Hudsonian and Canadian species visit us but their stays are usually limited. The following list is compiled from observations made by the writer from January 1902 to the present time and only includes those species to which no doubt may be attached as to their legibility of their being considered in the compilation:

(1) ***Rissa tridactyla.***—Kittiwake. Rare migrant. A flock of twelve were seen migrating over northern Bloomfield on February 22, 1903. The birds alighted for a few moments on Davey's Pond and I obtained an excellent view of same and positively determined their identity. This is the only record I have of this bird in this county.

(2) *Larus argentatus.*—Herring Gull. Common visitant throughout the year. Individuals appear each year in Branch Brook Park, one of Essex's large recreation centers, and on the Great Piece Meadows during the winter months. Is a common visitant along the Passaic River from Nutley to Newark Bay throughout the year.

(3) *Anas obscura.*—Black Duck. Rare winter migrant. Occasionally found on the Great Piece Meadows near Pine Brook. A pair was seen resting on a small pond in East Orange on December 16, 1906.

(4) *Branta canadensis.*—Canada Goose. A regular spring and fall migrant, appearing in early March and returning in November and early December.

(5) *Butorides virescens.*—Green Heron. Common summer visitant. Was first recorded on August 20, 1909, in Branch Brook Park. It later appeared in the same locality on September 9 of that year. It was found in this park on September 10 and 11 of this year and also at Davey's Pond on August 29.

(6) *Galliinago delicata.*—Wilson's Snipe. A common migrant and summer visitant.

(7) *Actitis macularia.*—Spotted Sandpiper. A rare summer resident, chiefly a common transient visitant. Found nest in a cornfield near Clinton on June 12, 1906, with three young just out of the shell and one unbroken egg. Most abundant in late June and early July.

(8) *Oxyechus vociferus.*—Killdeer. A rather rare transient visitant. First appeared on a farm on the outskirts of Bloomfield on July 3, 1902. It next appeared at the reservoir in the South Mountain Reservation, another of Essex's large parks, on July 18, 1909, and on March 6, 1910 a pair were found near the waterworks in East Orange.

(9) *Colinus virginianus.*—Bob-white. Formerly a common permanent resident, but now only a rare visitant in the farming districts where food is available.

(10) *Zenaidura macroura.*—Mourning Dove. Was formerly a common summer resident now only a transient visitant. When I first began making observations in 1902 this bird was fairly abundant during migrations and July and August, but within the last five years I have record of finding only ten individuals in the entire county, and these were taken at such times as would indicate the bird as only a transient visitant. No nests have been found since 1903.

(11) *Circus hudsonicus.*—Marsh Hawk. Permanent resident. Most common along the Newark Bay and on the Great Piece Meadows. Never found breeding.

(12) *Accipiter velox.*—Sharp-shinned Hawk. A common permanent resident. Have never located a nest of this species, although I am advised by a good authority that they did nest near Eagle Rock in the Orange Mountains in 1905 and 1906.

(13) *Buteo borealis.*—Red-tailed Hawk. A rare summer visitant. Have only found two specimens. One in East Orange on July 10, 1908. This bird was busily engaged in feeding on a freshly killed domestic rabbit and did not heed my approach until with fifteen paces. I approached as quietly as possible and obtained a fair view of the markings of the bird and established its identity. The other bird was shot by a boy in Verona on November 15, 1908. The shot had destroyed the feathers to such an extent that it was useless from the standpoint of the taxidermist.

(14) *Archibuteo lagopus sancti-johannis.*—Rough-legged Hawk. An uncommon summer visitant.

(15) *Falco sparverius.*—Sparrow Hawk. A common permanent resident. Pair with young found in large maple in East Orange on June 15, 1910. Have found that locally this little hawk prefers the telegraph wires for points of vantage when in search of food.

(16) *Syrnium varium.*—Barred Owl. An irregular visitant. On November 17, 18 and 19, 1908, one was about my home constantly and then disappeared. None were again seen until June 2, 1910, when a pair were present for about a half day.

(17) *Megascops asio.*—Screech Owl. A rather common permanent resident. A pair found nesting in decayed oak in Bloomfield during April, 1905.

(18) *Coccyzus americanus.*—Yellow-billed Cuckoo. A common summer resident. Found nest with three eggs in West Orange on June 2, 1907. This is the only nesting record I have.

(19) *Coccyzus erythrophthalmus.*—Black-billed Cuckoo. An uncommon summer resident. Abundant in 1906 and 1909. Other years about ten were recorded each season. No breeding record for the county.

(20) *Ceryle alcyon.*—Belted Kingfisher. A common summer resident. Found nesting in Glen Ridge and Verona in 1903.

(21) *Dryobates villosus.*—Hairy Woodpecker. A rather uncommon permanent resident.

(22) *Dryobates pubescens medianus.*—Downy Woodpecker. A common permanent resident. Found nesting in several isolated spots in South Mountain Reservation in 1906 and 1907. These are the only breeding records for the county.

(23) *Melanerpes erythrocephalus.*—Red-headed Woodpecker. A rather uncommon resident. Most abundant in May and June. No record of nesting.

(24) *Colaptes auratus luteus.*—Northern Flicker. Common permanent resident. Nests in all available places throughout the section.

(25) *Anstrostomus vocifcrus.*—Whippoorwill. An occasional summer resident, usually a common transient visitant. Located two sets of eggs in 1906 and one in 1909 on the ground in a small clearing in a patch of timberland in West Orange.

(26) *Chordeiles virginianus.*—Nighthawk. A common summer resident. Have no record of its nesting, but the birds are seen almost daily during June and July, both in Newark and over the immediate vicinity feeding on mosquitoes, which infest this neighborhood in great numbers.

(27) *Chætura pelagica.*—Chimney Swift. A common summer resident. Pairs nest in a number of the unused chimneys thorughout the county. Have nested in my own chimney each year as far back as I can recall.

(28) *Trochilus colubris.*—Ruby-throated Hummingbird. A common summer resident. Not as abundant this year as formerly.

(29) *Tyrannus tyrannus.*—Kingbird. A common summer resident. Have no record of its breeding within the county.

(30) *Myiarchus crinitus.*—Crested Flycatcher. A common summer resident in the wooded sections.

(31) *Sayornis phœbe.*—Phœbe. A common summer resident. Arrives about March 20 and remains with us until November 1. Nests under bridges and in sheds in the more rural parts of the county.

(32) *Horizopus virens.*—Wood Pewee. A common summer resident. Has nested for four consecutive years in Bloomfield on the horizontal branches of the Honey Locust.

(33) *Empidonax flaviventris.*—Yellow-bellied Flycatcher. A rare summer visitant. Only found on September 8, 1910, in Bloomfield in a copse of Honey Locust.

(34) *Empidonax minimus.*—Least Flycatcher. A common summer resident. Breeds throughout the county.

(35) *Cyanocitta cristata.*—Blue Jay. A common permanent resident. Most abundant in spring and autumn. Have no record of its nesting in the county.

(36) *Corvus brachyrhynchos.*—American Crow. A common permanent resident. Nests throughout the county in the more rural sections.

(37) *Sturnus vulgaris.*—Starling. Formerly quite rare, but now an abundant permanent resident. Nests in deserted woodpecker holes, hollow trees, bird boxes and on the station poles of the telephone companies. Have record of seven conflicts between these birds and *Colaptes a. luteus* and *Sialia sialis* wherein the last two named species have been ousted by these exotics. They have one very apparent redeeming feature, which covers up a lot of their misdemeanors, such as demoralizing our own birds, roosting over the sidewalks in the shade trees and on the protected eaves of buildings and making unsightly marks from their excrement, and various other objectionable practices, and this is their relentless war upon the *Passer domesticus.* Since these birds have become abundant the sparrows have been continually harassed and are seeking new sections where they may live undisturbed.

(38) *Dolichonyx oryzivorus.*—Bobolink. A common transient visitant.

(39) *Molothrus ater.*—Cowbird. Common summer resident. Have found their eggs in sets of *Vireo olivaceus, Dendroica æstiva* and *Setophaga ruticilla.*

(40) *Agelaius phœniceus.*—Red-winged Blackbird. A common summer resident. Usually in the marshy sections. Have found it breeding on the Great Piece and Newark Meadows and in Branch Brook Park.

(41) *Sturnella magna.*—Meadowlark. A common summer resident. Also a rare winter visitant. Breeds in the sparsely settled parts.

(42) *Icterus spurius.*—Orchard Oriole. Formerly a common summer resident, now only a visitant. Found a nest and three young in Bloomfield on May 30, 1904.

(43) *Icterus galbula.*—Baltimore Oriole. A common summer resident. Nests throughout the county in all sections.

(44) *Euphagus carolinus.*—Rusty Blackbird. A common visitant during migrations.

(45) *Quiscalus quiscula.*—Purple Grackle. Our most common blackbird. Has nested in Bloomfield for the past three years in a patch of evergreens.

(46) *Quiscalus quiscula aneus.*—Bronzed Grackle. An occasional visitant during migrations.

(47) *Carpodacus purpureus.*—Purple Finch. An uncommon migrant and winter visitant.

(48) *Loxia curvirostra minor.*—American Crossbill. Found in a group of conifers in Bloomfield only on December 28, 1904.

(49) *Acanthis linaria.*—Redpoll. Rare winter visitant. Only found on March 5, 1905, at Silver Lake.

(50) *Astragalinus tristis.*—American Goldfinch. A common summer resident and winter visitant.

(51) *Passerina nivalis.*—Snowflake. A rare winter visitant. Flocks found only on December 28, 1902, and February 19, 1905, at Bloomfield.

(52) *Coturniculus savannarum passerinus.*—Grasshopper Sparrow. A rare summer visitant. Only found on May 16, 1909, in a clump of meadow grass near the Passaic River just above Newark Bay.

(54) *Zonotrichia leucophrys.*—White-crowned Sparrow. A rare visitant. Only found on May 11, 1909.

(55) *Zonotrichia albicollis.*—White-throated Sparrow. A common winter resident. Also abundant during migrations. Rare in summer.

(56) *Spizella monticola.*—Tree Sparrow. A common winter resident.

(57) *Spizella socialis.*—Chipping Sparrow. A common summer resident. Breeds in numerous places throughout the county.

(58) *Spizella pusilla.*—Field Sparrow. A common summer resident. Breeds in open fields and in hedgerows throughout the county, especially in the rural districts.

(59) *Junco hyemalis.*—Slate-colored Junco. An abundant winter resident.

(60) *Melospiza cinerea melodia.*—Song Sparrow. A common summer resident. Also present in sheltered localities during the winter. Nests throughout the county.

(61) *Melospiza georgiana.*—Swamp Sparrow. Common summer resident. Breeds in the low lands and near streams.

(62) *Passerella iliaca.*—Fox Sparrow. Common during migrations. Rare winter visitant.

(63) *Pipilo erythrophthalmus.*—Towhee. A common summer resident. Nests in blackberry brambles in many parts of the county.

(66) *Piranga erythromelas.*—Scarlet Tanager. Common summer resident. Found pair with family of three about a week old on July 18, 1909, in South Mountain Reservation. This is the only breeding record I have.

(67) *Petrochelidon lunifrons.*—Cliff Swallow. Occasionally seen during migrations.

(68) *Hirundo erythrogastra.*—Barn Swallow. Abundant summer resident. Nests in open barns and hay-lofts with easy access, in rural sections of the county.

(69) *Iridoprocne bicolor.*—Tree Swallow. A common summer resident. Most abundant in fall it is seen daily in vast numbers flying from the west to the Newark Meadows, where they roost. Nest on Great Peace Meadows in hollow trees.

(70) *Riparia riparia.*—Bank Swallow. A common summer resident. Nests under bridges and in the canal locks in several places in the county.

(71) *Lanius borealis.*—Northern Shrike. Rare winter visitant. only specimen found on February 7, 1906, at Bloomfield.

(72) *Ampelis cedrorum.*—Cedar Waxwing. Resident where found. A pair nested in a mulberry at Bloomfield during May, 1904. This nest I still have in my collection.

(73) *Vireo olivaceus.*—Red-eyed Vireo. A common summer resident. Their pensile nests may be found in many places throughout the county. Have found this species is greatly imposed upon by the *Molothrus ater*. Have located six nests with eggs of the Cowbird present.

(74) *Vireo flavifrons.*—Yellow-throated Vireo. A common summer resident. Nests in shade trees along highways and much traveled thoroughfares in the residential sections.

(75) *Vireo gilvus.*—Warbling Vireo. A rare summer visitant..

(76) *Mniotilta varia.*—Black and White Warbler. A common migrant and occasional summer visitant.

(77) *Helmitheros vermivorus.*—Worm-eating Warbler. A rare migrant.

(78) *Helminthophila pinus.*—Blue-winged Warbler. An occasional summer resident, usually only a migrant. Arrival May 5 to 16th.

(79) *Helminthophila chryspotera.*—Golden-winged Warbler. A rare migrant. Arrives about May 7.

(80) *Compsothlypis americana.*—Parula Warbler. A common migrant. Arrival May 5 to 15th.

(81) *Dendroica æstiva.*—Yellow Warbler. A common summer resident. Nests throughout the county. Arrives from May 1 to 5th. Departs about September 1.

(82) *Dendroica cærulescens.*—Black-throated Blue Warbler. A common vernal migrant. Rare in autumn. Arrives May 7 to 16th.

(83) *Dendroica coronata.*—Myrtle Warbler. The commonest of all warblers during migrations. Arrives April 21 to May 10. Departs about November 15.

(84) *Dendroica maculosa.*—Magnolia Warbler. A common vernal migrant. Arrives May 7 to 15th.

(85) *Dendroica pensylvanica.*—Chestnut-sided Warbler. An occasional summer resident. Most abundant in May and early June. Arrives May 2 to 15th.

(86) *Dendroica castanea.*—Bay-breasted Warbler. A rare migrant. Arrives May 4 to 21st.

(87) *Dendroica striata.*—Black-poll Warbler. A rather rare migrant. More abundant some years than others. Arrives May 6 to 24th.

(88) *Dendroica virens.*—Black-throated Green Warbler. A common migrant. Arrives May 4 to 15th.

(89) *Dendroica vigorsii.*—Pine Warbler. A rather common vernal migrant. Rare in autumn. Arrives May 5 to 13th.

(90) *Dendroica palmarum hypochrysea.*—Yellow Palm Warbler. The earliest warbler to appear in the vernal migrations. Rare in autumn. Arrives April 12 to 22d.

(91) *Seiurus aurocapillus.*—Oven-bird. The commonest of breeding warblers. Nest found at Upper Mountclair on June 2, 1906. Arrives May 1 to 15th.

(92) *Seirus noveboracensis.*—Water-Thrush. A rare visitant. Found only on July 10, 1902, in South Orange.

(93) *Geothlypis trichas.*—Maryland Yellow-throat. A common summer resident. Nests in many places throughout the county.

(94) *Icteria virens.*—Yellow-breasted Chat. A common summer resident. Have no nesting record.

(95) *Wilsonia mitrata.*—Hooded Warbler. A rather common migrant. Arrives May 7 to 19th.

(96) *Wilsonia canadensis.*—Canadian Warbler. A common vernal migrant. Arrives May 10 to 26th.

(98) *Sctophaga ruticilla.*—Redstart. A rather common summer resident. Found nest at Bloomfield on May 20, 1908.

(99) *Anthus pensilvanicus.*—Pipit. A common summer resident in the more sparsely settled sections. No record of nesting.

(100) *Galeoscoptes carolinensis.*—Catbird. A common summer resident. Nests throughout the county.

(101 *Toxostoma rufum.*—Brown Thrasher. A rather common summer resident. Nests in the more rural sections of the county.

(102) *Thryothorus ludovicianus.*—Carolina Wren. A rare visitant. Only record made at Bloomfield on September 18, 1905.

(103) *Troglodytes aëdon.*—House Wren. A common summer resident. Nests throughout the county.

(104) *Telmatodytes palustris.*—Long-billed Marsh Wren. A common summer resident. Breeds in the Great Piece and Newark Meadows in large numbers.

(105) *Certhia familiaris americana.*—Brown Creeper. A rather common winter visitant

(106) *Sitta carolinensis.*—White-breasted Nuthatch. A common winter resident. Rare visitant in summer.

(107) *Bæolophus bicolor.* Tufted Titmouse. A winter visitant. Found it only on February 27, 1910. Mr. C. A. Merrill of East Orange, advises me that he has seen specimens throughout the county on numerous occasions.

(108) *Parus atricapillus.*—Black-capped Chickadee. A common winter resident. Also quite common in summer. Found nesting on South Mountain Reservation on April 20, 1903. Only record I have.

(109) *Regulus satrapa.*—Golden-crowned Kinglet. A common winter visitant.

(110) *Regulus calendula.*—Ruby-crowned Kinglet. A common migrant.

(111) *Hylocichla mustelina.*—Wood Thrush. A common summer resident. Nests in many places throughout the county.

(112) *Hylocichla fuscescens.*—Wilson's Thrush. A rather common summer resident. More abundant some years than others.

(113) *Hylocichla alicia.*—Gray-cheeked Thrush. A rather common migrant.

(114) *Hylocichla swainsonii.*—Olive-backed Thrush. A common migrant.

(115) *Hylocichla guttata pallasii.*—Hermit Thrush. A common migrant.

(116) *Merula migratoria.*—Robin. An abundant summer resident. Occasional winter visitant.

(117) *Sialia sialis.*—Bluebird. An abundant resident throughout the year.

(118) *Sphyrapicus varius.*—Yellow-bellied Sapsucker. A rather common permanent resident. Found nest with young in South Mountain on May 2, 1903.

Bloomfield, N. J.

THE WILSON BULLETIN

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Editorial

To the many friends and correspondents who have shown their solicitude for the editor in his long illness, the announcement is here made that the probability of complete speedy recovery is excellent. It is almost worth while being desperately ill to learn how many are ones friends!

The editor also wishes to express his gratitude to all for your patience over the delay in the appearance of the Bulletin, and delay in replying to correspondence, during the long interval.

It is with genuine satisfaction that the editor presents the first article in this double number, because it is without question the most notable paper upon field studies which has been published, and because it illustrates what the Wilson Club stands for. Studies along similar lines are possible to many of us. Are we equal to the opportunity.

Acknowledgement is here made of books, pamphlets and papers which have been received, but which must await renewed strength for review. Ornithological literature is becoming pleasantly abundant!

The editor hopes to be able to present a full report of the studies of bird movements on Pelee Island, which occupied a class of ten students the whole of August and part of September. It was expected that this report would be ready for this issue, but the unkindness of the island in presenting to him who was to correlate the facts gathered, with the germs of typhoid, prevented.

We are glad to announce that the March issue of the Bulletin will contain a paper based upon careful studies of the birds in southern Illinois, in their relation to plant associations, by Frederick C. Gates of the University of Michigan, besides other papers and notes of exceptional value and interest. We have inside information that an increasing number of persons are conducting summer studies along the line of the relations of the birds to their environment. Such studies should be written and submitted to the Bulletin for publication.

Reviews

DISTRIBUTION AND MIGRATION OF NORTH AMERICAN SHOREBIRDS." By WELLS W. COOKE, BIOL. SURVEY BULL. No. 13.

This pamphlet contains a very thorough and painstaking compilation of ornithological data on the Shorebirds of North America. Under every species is noted the breeding and winter range, the migration range, the spring and fall migration It is the first pamphlet that has done the numerous records to be found in the Wilson Bulletin fair justice, in great contrast to Ridgway's Birds of Middle and North America and the new A. O. U. Check List, where records in the Bulletin have been persistently ignored, in the face of the fact that all records and serious articles contain scientific names. Nevertheless, as far as Ohio is concerned, a few errors and omissions can be found, e.g. the earliest Ohio state record in the spring for *Totanus melanoleucus* is March 14, 1899, *Pisobia minutilla*, April 19, 1909, for *Bartramia longicauda*, March 21, 1902, for *Pisobia maculata*, March 24, 1909, etc. But we do not want to pick flaws, and believe that these little faults do not

detract from the value of the volume, which conains a vast amount of good information and should be in the hands of every bird student in the land. W. F. H.

CHECK LIST OF NORTH AMERICAN BIRDS. THIRD EDITION REVISED AUGUST, 1910.

After preparation of four years the "new" Check List at last has made its appearance. We are both delighted with it and disappointed. Delighted with the nine changes in the construction of the new edition as enumerated on pages 11 and 12, disappointed because some other changes, timely and needed, indeed, have not been forthcoming. It may perhaps seem superfluous to give another review of this work, since an extended review of it has already appeared in the Auk. Unfortunately, however, the reviewer in the Auk is himself a member (in fact the chairman of the committee) which had the preparation o fthe Check List in hands, hence, although we have the greatest personal respect and admiration for him, cannot though he may strenuously strive to be absolutely impartial in his review. On the other hand we well know that the Reviews signed J. A. A. stand exactly for the views of J. A. A., and do not necessarily have back of them the authority of the entire A. O. U. Likswise the initials here appended indicate only the writer as responsible for the stand taken.

The List as a whole is a great improvement over the former editions, as in giving determination of type species, stating type localities and similar other matters. A purely typographical error is found on page 262, the Genitive of Gambel must be gambeli and not gambel. An inconsistency is the accentuation of Calĭdris in Calidris leucophæa and Cálidris in Vireosylva calidris, it should be calĭdris in both cases. The name of the Vesper Sparrow must be Poœcétes and "not" Poœcetés, for Poa and oiketes can never be contracted into a word having the accent on the last syllable. To any scholar the perpetuation of such cacographical errors as Leptotila and Harelda and others is a source of grief, for no matter what the rules are governing our List in bird names in such cases, it is no more than proper that such glaring mistakes should be wiped out forever; or if the rules of nomenclature forbid the correct spelling of names, then change these rules.

We had fervently hoped to see a modern system of classification used in the Check List, for to place the Striges with the Falcones and Sarcorhamphi or better between the Falcones and Coccyges, where they certainly do not belong, and similar instances are numerous enough, and then to excuse the retaining of the old system by saying "that all present systems of classification in orni-

thology are admittedly tentative" is certainly weak. "To use the old Check List system unchanged for the sake of convenience" is a very lame excuse for not giving us a modern and proper classification. Though this is bad enough, another disappointment is still worse, and neither justifiable nor excusable, the one pointed out by the late Dr. Elliot Coues in 1897 (Auk Vol. XIV, p. 229) viz. "that of passing from the lowest to the highest forms as applied to the families, but not to the genera within these families, a reversal of sequence of families coupled with non-reversal of the sequence of genera within the families." Dr. Coues quotes as an illustration the Anatidæ, and it is plain to any thinking person that he was correct in his remarks. Truly in regard to classification of birds—for the whole structure of a bird must be taken into consideration, not merely the external characters—the new Check List is a disappointment, and it will be a long time before it will be accepted as an authority along these lines!

The Geographical Ranges are admittedly difficult to work out, but we think had the authors consulted any Ohio ornithologist, as they did the Illinois men, or the pages of the Wilson Bulletin, errors and omissions concerning this state would have been avoided. The Chuck-will's-widow is erroneously credited to Ohio; the Anhinga, the Surf Scoter, the Brant, Cory's Least Bittern, Egret, Little Blue Heron, Ruff, Swallow-tailed Kite, Western Redtail, Goshawk, Red-cockaded Woodpecker, Yellow-headed Blackbird, Smith's Longspur, Leconte's Sparrow, Nelson's Sparrow, and many other species have been taken in Ohio and should be credited with an accidental, in some cases as the Little Blue Heron, with a casual occurrence in Ohio. The Prairie Chicken still exists in Michigan, the Olive-backed Thrush is of accidental occurrence in Europe-Russia for instance,—and the European Whitefronted Goose, if it is of doubtful record only from Eastern Greenland, should be relegated to the hypothetical list.

We had also hoped to see a rigid investigation into the standing and value of some subspecies. The Willow Goldfinch, the Desert Sparrow Hawk, and others too numerous to mention, should not be worthy of a name. Fifteen years ago the Scaup Duck of America was considered a subspecies with a name (nearctica), the Herring Gull likewise (smithsonianus) and any attempt to claim the futility of that procedure would have been scorned and castigated—but today we know their exact status through a thorough and unprejudiced investigation. Why not apply it to these cases of the present day? Many of these subspecific distinctions exist—as the writer well knows—and are of sufficient value to call for a name, many are only a matter of personal vanity or personal keenness of eye-sight, or ability to distinguish various unmentionable shades of one and

the same color, but all so minute and microscopic that they are not worthy of a name, but are merely what the Germans so aptly call "Gelehrtenspielereien." The millennium, however, is still a year or two distant, and up to that time we will have to be contented with merely stating our disappointments and waiting for wiser heads to solve the many problems that vex us and keep us from reaching perfection in our beloved science of ornithology.

W. F. H.

Field Notes

A LITTLE HELP FROM THE CROWS.—It is all very well for the Easterner to saunter out into the grove on a mild April morning and mark down this years' crop of Crows' nests, all smugly outlined against a clear sky. Be the birds ever so secretive, the stark outlines of a Crow's nest in crotch of beech or elm are easy oological marks, especially if set off by a telltale black "handle." But Crows' nests in Western Washington are none of the commonest, and when the birds hide them, as they usually do, in the depths of fir trees (and sometimes at forbidding heights) the inquiring bird-man naturally welcomes a little assistance in the search.

On the "prairies" of Pierce County the Douglas firs renounce their Olympian disdain and present heights that may be scanned by frail mortals not yet equipped with flying machines. But even here the quest is not easy. The firs, though dwarfed in height, are of very stocky growth, and afford eye-proof shelter for even a Crow's nest. A certain stretch of prairie, dotted here and there with fir clumps composed of trees from fifty to eighty feet in height, was evidently the breeding haunt of a small colony of Western Crows (*Corvus brachyrhynchos hesperis*). (The place is about ten miles from tide water, and the birds are really intermediate in size between *C. b. hesperis* and *C. b. caurinus*, but their voices are clear and their range is strictly inland).

I had lazily noted the activities of this colony on a previous visit, but I was ill-prepared to hear the insistent hunger cry of a manifest young Crow so early in the season, April 18, 1910, proceeding as it did from the top of a dense fir tree, one of a grove in which I lay watching for Kinglets. The tree was screened from view, but I soon located it by the sound, and eagerly drank in the ancient wail of the youngster while one of the parent birds answered warily from a distance.

It really was not worth while to climb the tree, but Bird-boy (*ornithologicus secundus maybe*) was very anxious to see a young Crow, and I went up. Judge of my surprise when a full grown Crow

flapped off the nest and uncovered a single fresh egg! It was the female, new to her duties, who clamored for food, and perhaps for sympathy, from her dallying lord.

Once discovered the method proved the touchstone of success. A stealthy approach was made later to another part of the colony and three females were heard uttering the hunger-cry, *An(h)*, *An(h)*, *An(h)*. A male Crow detected the ambuscade and shouted a warning, whereupon one of the brooders promptly subsided. Other birds, presumably males, came hurrying up and a general alarm was sounded, but one female, a spoiled darling, insisted upon having attention from her reluctant mate. He, poor fowl, stood the teasing as long as he could, then yielded at last in a moment of weakness and paid a surreptitious visit to a certain treetop, while the man took notes. When I found that the nest, perfectly concealed at a height of sixty feet, contained a single greenish blue egg, as immaculate as a Robin's, I pardoned the young husband's indulgence.

Never, ah, never, does a man need the prophetic gift as when he is gazing covetously, doubtfully, upon a "short" set. If he takes it he knows he will upbraid himself for his incontinence the rest of his days. If he leaves it he braves a thousand mischances, jays, squirrels, storms, worst of all the jealous owners themselves. Well, I took the latter alternative, and upon returning ten days later, gazed into the emptiest nest I ever saw

It was notable also upon the later visit that there was no more shouting of "Here am I" on the part of the sitting birds. They had learned their lesson.

Blaine, Wash. W. LEON DAWSON.

SOME ILLINOIS CARDINALS.—As far as I am able to gather, the Cardinal seems to be considered a rather rare bird about Chicago. The meager literature at my disposal classes it thus, and I have heard it referred to by collectors as a "Capture" well worth while. In his "Birds of the Chicago Area," Mr. F. M. Woodruff sums up the Cardinals' status thus:

"I have heard of the Cardinal being taken in our public parks, and have myself secured one specimen, which showed, however, unmistakable signs of having been an escaped cage bird. Mr. J. Grafton Parker, Jr., has a specimen of this species which was taken at Kouts, Indiana, on December 11, 1893. Some years ago I found a nest of the Cardinal at River Forest, Illinois. Mr. O. M. Schantz informs me that in the year 1904 there were two pairs nesting at Riverside, Illinois."

Mr. Woodruff wrote the above in the fall of 1906 and we see that at that time the Cardinal was looked upon as by no means a common species. Has it increased about here during the past four years? If not it seems remarkable that I should have wakled into their hiding place the first hing. Their name appears upon the first list of Summer Birds that I made in Illinois! And I, a stranger in the Chicago Area, thought that I had seen a "Common" bird!

I was following the bank of the Desplaines River at River Forest, Illinois, when I heard a Cardinal whistle. I straightway entered his name upon my list and passed on: without so much as a look at him. Back in the Delaware Valley he had ever been a familiar feature in my landscape—winter and summer—and I failed to recognize in that old *familiar* chirp the chirp of a *rare* bird. Perhaps these are the same River Forest Cardinals that built the nest referred to by Mr. Woodruff, above?

However that may be I found the Cardinals there on June 19, 1910, and saw them again on June 24, and they were still about the same woodland on October 30, 1910. It was a novel experience to meet this old bird friend in a new field and discover that he had risen from the rank of commonplace to hold the exalted position of a rarity. CHRESWELL J. HUNT.

MIGRATION NOTES FROM NORTHERN NEW JERSEY.—Last winter was notable for its great scarcity of bird-life. Many of our permanent residents were much scarcer than usual, or entirely missing and at the same time, northern birds were equally hard to find.

The only northern species that I saw more frequently than usual was the Northern Shrike. Perhaps that may, in a measure, account for the scarcity of some of the smaller birds.

The ferocity of the bird can be illustrated by an incident I witnessed on March 12 of this year. Some Robins were picking worms in a bush-grown field when I noticed that something was alarming them. They gave their alarm-call and flew up into the bushes. The cause of this disturbance was a Shrike that had taken his station in a tree and was evidently looking for a meal. I did not suppose that he would attack a bird of his own size, but the contrary was the case, for when a Robin flew out of a bush the Shrike was after him and actually struck at him, though the Robin escaped by flying into some thick bushes.

It was my pleasure, during the past winter, to record two very unusual occurrences—a Brown Thrasher seen on January 2, and again on February 4, and a Red-winged Blackbird on January 28.

The warm weather of early March brought Bluebirds, Robins, Grackles and Red-wings in unusual numbers. It also hastened the

northward migration of several species—Brown Creepers, Winter Wrens, and Fox Sparrows all left us during the last week of March. This is the first season in which I have failed to record all of these in April.

The latter part of April and most of May were unfavorable for migrations, and birds that were due to arrive by the first of the week of May were nearly all behind their schedule. It was unusual to see Hermit Thrush as late as May 14, or Yellow Palm Warbler on May 4. I have never before noted the latter species after April.

The Warblers were not so numerous as usual during the past spring, due in part to the fact that their arrival was late, and consequently the season was a short one. The always common Myrtles and Black-polls were unusually abundant, and the generally rare Bay-breasted were fairly common on these successive days, May 23, 24 and 25. But some species I missed entirely, or noted only one or two individuals. Warbling Vireos are heard in the shade-trees of our residential streets this summer after an absence of years.

An incident that is worth putting on record, is the appearance, on June 18, of the Red Crossbill. These birds are sometimes present, in large flocks, during the winter, but were not here last season. Their presence here at this time of year is not to be looked for, but their habits are very erratic, and they have been known to nest far south of their usual breeding-range.

The last spring migrants, Black-poll Warblers, passed northward the first week of June, and now in a few weeks we shall be looking for the first autumn migrations, when the Tree Swallows begin to flock upon our meadows about July 20.

Morristown, N. J. R. C. CASKEY.

SQUATAROLA SQUATAROLA IN OHIO.—This species is considered rare in Ohio. Wheaton reports in 1882, that Kirtland, Langdon, Drury, and Freeman speaks of its rarity; he met with but one specimen in August, 1875. Oliver Davie took one specimen May 12, 1876, in Columbus. Dawson has nothing to add to this in his "Birds of Ohio" (1904). Jones in Wilson Bulletin September, 1909, page 130, gives May 16 and 18, 1908, as migration dates, but does not say whether any specimens were taken or not. It gives me great pleasure to add two records to these. On September 1, 1901, I met with two birds of this species on the Grand Reservoir, in fierce, squally weather, and this was verified by the actual taking of a female on September 16, 1910, at the Loramie Reservoir by Mr. F. A. Anthony of Loramie, Shelby County, Ohio. This last

specimen is now in my collection, and in the light of the above statements, seems to be the third time only that a specimen has actually been taken in the stae of Ohio. The diagnostic marks of this bird to distinguish it from the American Golden Plover as given in the books, viz. the rudimentary fourth toe, heavier legs and bill, will do all right when the bird is in your hand, but not in the field. There the white upper tail-coverts serve to distinguish it from the Golden Plover, whose upper tail-coverts are concolor with the back. The German birdbooks point out this fact, the Americans do not, and still at a distance it will prove the *one* diagnostic mark. W. F. HENNINGER.

GREEN HERON IN NEW JERSEY.—It may be of interest to some of your New Jersey readers to know that the Green Heron (*Butorides virescens*) is becoming quite common in several localities in the northern part of the state. I have personally located individuals in Branch Brook Park, Newark, N. J., on August 20 and September 9, 1909, and on September 10 and 11 of this year. At Pompton Lake on September 13, 1909, two individuals were seen, and at Greenwood Lake on September 14, 1909, three more were found. At Davey's Pond, in the northern part of Bloomfield, one was observed on August 29, 1910, and, in addition to the above records, several were reported to have been shot at Echo Lake during October of 1909. LOUIS S. KOHLER.

September 13, 1910. Bloomfield, N. J.

NAMES PROPOSED FOR MEMBERSHIP.

The following nominations for active membership in the Wilson Club have been approved by the Executive Committee. Members will therefore confer a favor in notifying the Secretary at once if objections to any of these are offered. In the absence of objection, candidates are considered duly elected, according to our Constitution:

Frank M. Chapman, American Museum of Natural History, New York City.

William Dreuth, 1845 Oakdale Ave., Chicago, Ill.

Ruthven Deane, 135 Adams St., Chicago, Ill.

Prof. James S. Hine, Ohio State University, Columbus, Ohio.

Prof. Wilfred H. Osgood, Dept. Zoology, Field Museum, Chicago, Ill.

Rev. P. B. Peabody, Blue Rapids, Kansas.

INDEX VOL. XXII, 1910

Acanthis linaria. 36, 192.
Accipiter velox. 182, 189.
Actitis macularia., 182, 187.
Ægialitis vocifera. 45.
Agelaius phoeniceus. 32, 183.
Aix sponsa. 44.
Ammodramus henslowi. 46.
savannarum australis. 38.
Ampelis cedrorum. 104, 193.
Anas obscura. 188.
rubripes. 55.
Anhinga. 199.
Anhinga anhinga. 137.
Anthus pensilvanicus. 174, 194.
Antrostomus vociferus. 190.
Archibuteo lagopus sancti-johannis. 189.
Ardea herodias. 45.
Asio flammeus. 56.
Astragalinus tristis. 36, 46, 183, 192.
Aythya affinis. 45.

Baeolophus bicolor. 177, 195.
Baldpate. 18, 76, 77, 78.
Bartramia longicauda. 197.
Bittern. 7, 11, 65, 68, 70, 73, 75, 76, 78.
Cory's. 199.
Least. 66.
Blackbird. Red-winged. 22, 32, 44, 65, 72, 73, 74, 77, 101, 183, 202.
Rusty. 34, 191.
Yellow-headed. 32, 199.
Bluebird. 47, 58, 73, 74, 77, 118, 126, 181, 195, 202.
Bob-white. 69, 128, 187.
Bobolink. 7, 32, 184, 186, 191.
Brant. 199.
Branta canadensis. 188.
Bunting, Indigo. 100, 183.
Buteo borealis. 56, 189.
lineatus. 45.
Butorides virescens. 188, 204.

Calcarius lapponicus. 37.
Canvas-back. 18, 76.
Cardinal. 46, 72, 99, 201, 202.
Florida. 46.
Cardinalis cardinalis. 46, 99.
floridamus. 46.
Carpodacus purpureus. 35, 192.
Catbird. 46, 78, 175, 184, 194.
Catharista atrata. 45.
Cathartes aura septentrionalis. 45.
Centurus carolinus. 45.
Certhia familiaris americana. 177, 195.
Ceryle alcyon. 45, 182, 189.
Chaetura pelagica. 182, 190.
Chat, Yellow-breasted. 173, 194.
Chicken, Prairie. 188, 199.
Chickadee. 24, 178, 195.
Carolina. 46.
Chondestes grammacus. 39.
Chordeiles virginianus. 190.
Circus hudsonius. 45, 189.
Cistothorus stellaris. 176.
Coccyzus americanus. 192, 189.
erythropthalmus. 189.
Colaptes auratus. 45, 55, 127
latens. 182, 190, 191.
Colinus virginianus. 187.
Colymbus holiboelli. 44.
Compsothlypis americana. 193.
usneae. 110.
Coot. 45, 65, 68, 69, 70, 73, 75, 76.
Cormorant, Double-crested. 55.
Corvus brachyrhynchos. 21, 183, 191.
pascuus. 45.
hesperis. 200.
caurinus. 200.
Coturniculus savannarum australis. 46.
floridanus. 46.
passerinus. 192.
Cowbird. 32, 72, 183, 191, 193.
Crane, Sandhill. 43, 45, 115.
Creeper, Brown. 70, 74, 177, 195, 203.
Crow. 7, 23, 31, 65, 68, 69, 70, 73, 74, 77, 118, 183, 191.
Fish. 44.
Florida. 45.
Western. 200, 201.

Crossbill, Red. 36, 192, 203.
White-winged. 36.
Cuckoo, Black-billed. 8, 77, 78, 189.
Yellow-billed. 182, 189.
Cyanocitta cristata. 30, 183, 191.
Cyanospiza cyanea. 183.

Dendroica aestiva. 110, 184, 191, 194.
caerulea. 112.
caerulescens. 110, 194.
castanea. 112, 194.
coronata. 46, 111, 194.
discolor. 115.
fusca. 113.
kirtlandi. 114.
maculosa. 194.
magnolia. 111.
palmarum. 46, 114.
hypochrisea. 46, 194.
pensylvanica. 112, 184, 191.
striata. 113, 194.
tigrina. 110.
vigorsi. 46, 114, 194.
virens. 114, 194.
Dickcissel. 100, 101.
Dolichonyx oryzivorus. 32, 184, 191.
Dove, Ground. 44.
Mourning. 45, 48, 65, 69, 78, 184, 187.
Dryobates borealis. 45.
pubescens. 45.
medianus. 190.
villosus. 189.
Duck, Black. 12, 19, 55, 68, 69, 70, 72, 75, 76, 77, 78, 188.
Lesser Scaup. 18, 45, 76, 78.
Ruddy. 71, 72, 78.
Scaup. 76, 199.
Shoveller. 75.
Wood. 12, 44, 68, 69, 70, 72, 73, 75, 76.
Dumetella carolinensis. 46, 175.

Eagle, Bald. 65, 72, 73, 74, 78.
Ectopistes migratorius. 47.
Egret. 199.
Empidonax flaviventris. 28, 190.
minimus. 29, 183, 190.
trailli alnorum. 28.
virescens. 28.
Euphagus carolinus. 34, 191.

Falco sparverius. 45, 188.
Finch, Purple. 24, 35, 192.
Flicker. 45, 55, 127.
Northern. 24, 68, 70, 76, 77, 118, 132, 133, 135, 171, 182, 190.
Flycatcher, Acadian. 28.
Alder. 28.
Crested. 26, 190.
Least. 29, 183, 190.
Olive-sided. 27.
Yelolw-bellied. 28, 190.
Fulica americana. 45.

Galeoscoptes carolinensis. 184, 194.
Gallinago delicata. 184, 187.
Gallinule, Florida. 68.
Gavia immer. 56.
Geothlypis trichas. 46, 184, 194.
brachydactila. 172.
Gnatcatcher, Blue-gray. 179.
Golden-eye, American. 18.
Goldfinch, American. 24, 36, 46, 70, 75, 76, 77, 78, 183, 192.
Willow. 199.
Goose, Canada. 21, 188.
European White-fronted. 199.
Hutchins'. 124.
Goshawk. 199.
Grackle, Boat-tailed. 44.
Bronzed. 34, 77, 192, 202.
Purple. 183, 191.
Grebe, Holboell's. 21.
Horned. 21, 44, 74, 78.
Pied-billed. 20, 21, 43, 44.
Grosbeak, Evenenig. 35.
Northern Pine. 35.
Rose-breasted. 100, 183.
Grus americana. 45.
canadensis. 115.
mexicana. 115.
Gull, Bonoparte's. 72, 78.
Herring. 7, 44, 65, 66, 68, 69, 70, 71, 72, 73, 74, 75.
Kittiwake. 187.
Slaty-backed. 119.

Hawk, Cooper's. 64, 65, 66, 67, 69, 70, 71, 72, 73, 74, 75, 76, 77.
Broad-winged. 65.
Desert Sparrow. 199.

Duck. 65, 67, 68, 70, 75, 76, 77, 78, 189.
Marsh. 45, 65, 66, 67, 70, 75, 76, 77, 124, 189.
Pigeon. 65, 67, 78.
Red-tailed. 51, 56, 67, 69, 70, 72, 73, 77, 124, 189.
Red-shouldered. 45, 72, 73, 74.
Rough-legged. 77, 188.
Sharp-shinned. 64, 65, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 182, 189.
Sparrow. 7, 10, 24, 45, 64, 65, 189.
Western Red-tailed. 199.
Helminthophila chrysoptera. 193.
pinus. 193.
Helmitheros vermivorus. 107, 193.
Heron, Black-crowned Night. 68, 70, 76.
Great Blue. 10, 11, 15, 45, 68, 69, 75, 76, 78.
Green. 68, 188, 204.
Little Blue. 199.
Hesperiphona vespertina. 35.
Hirundo erythrogaster. 103, 183, 193.
Horizopus virens. 183, 190.
Hummingbird, Ruby-throated. 65, 190.
Hylocichla aliciae. 180, 195.
fuscescens. 179, 195.
guttata palassi. 47, 181, 195.
mustelina. 179, 184, 195.
swainsoni. 180, 195.
Icteria virens. 173, 194.
Icterus galbula. 34, 183, 191.
spurius. 33, 183, 191.
Iridoprocne bicolor. 46, 103, 183, 193.
Jay, Blue. 23, 30, 71, 73, 74, 78, 126, 183, 191.
Florida. 43.
Junco hyemalis. 41, 192.
Killdeer. 45, 68, 70, 72, 77, 187.
Kite, Swallow-tailed. 199.
Kingbird. 24, 26, 182, 190.
Kingfisher, Belted. 9, 10, 19, 45, 68, 70, 75, 77, 182, 189.
Kinglet, Golden-crowned. 69, 71, 72, 73, 74, 178, 195.
Ruby-crowned. 46, 66, 67, 71, 72, 73, 74, 75, 178, 195.
Lagopus lagopus. 120.
alleni. 119
rupestris. 119.
welchi. 119.
Lanius borealis. 105, 193.
ludovicianus migrans. 105.
Lanivireo flavifrons. 104.
Lark, Horned. 29, 55.
Hoyt Horned. 30
Prairie Horned. 29.
Larus argentatus. 44, 188.
cachinnans. 119.
marinus. 119.
schistisagus. 119.
Loon. 21, 56.
Longspur, Lapland. 37.
Smith's. 194.
Loxia curvirostra minor. 36, 192.
leucoptera. 36.
Mallard. 12, 18, 21, 73, 76, 78.
Martin, Purple. 8, 12, 101, 102, 125.
Meadowlark. 7, 33, 46, 65, 76, 77, 118, 183, 191.
Florida. 46.
Megascops asio. 189.
Melanerpes erythrocephalus. 190.
Melospiza cinerea melodia. 46, 97, 183, 192.
georgiana. 98, 192.
lincolni. 97.
Merganser, Hooded. 12, 18.
Red-breasted. 18, 72.
Merula migratoria. 195.
Mimus polyglottos. 46, 174.
Mniotilta varia. 46, 107, 193.
Mockingbird. 46, 174.
Molothrus ater. 32, 183, 191, 193.
Myiarchus crinitus. 26, 190.
Myiochanes virens. 27.
Nannus hiemalis. 176.
Nighthawk. 8, 74, 77, 190.
Nuthatch, Brown-headed. 46.
Red-breasted. 66, 69, 71, 177.
White-breasted. 177, 184, 195.
Nuttalornis borealis. 27.

Oporornis agilis. 172.
formosa. 172.
philadelphia. 172.
Otocoris alpestris. 29, 55.
praticola. 29.
hoyti. 30.
Oriole, Baltimore. 34, 183, 191.
Orchard. 33, 183, 191.
Osprey. 43, 44, 67, 68, 76, 184.
Oven-bird. 115, 184, 194.
Oxyechus vociferus. 187.
Owl, Barred. 56, 69, 118.
Florida Barred. 45.
Great Horned. 18.
Screech. 18, 69, 118, 156, 188.
Short-eared. 56, 71, 73, 76.
Snowy. 58, 124.

Pandion haliaetus carolinensis. 44, 184.
Parus atricapillus. 195.
Passer domesticus. 35, 191.
Passerculus sandwichensis savanna. 38.
Passerella iliaca. 98, 192.
Passerina cyanea. 100.
nivalis. 192.
Passerherbulus henslowi. 38.
Pelican, Brown. 44.
Penthestes atricapillus. 178.
carolinensis. 46.
Petrochelidon lunifrons. 102, 193.
Peucaea aestivalis bachmani. 97.
Pewee, Wood. 183, 190.
Phalacrocorax auritus. 55.
Phloeotomus pileatus. 45.
Phoebe. 26, 45, 70, 73, 78, 183, 190.
Pigeon, Passenger. 47, 48, 51, 53.
Pinicola enucleator leucura. 35.
Pintail. 71, 72, 76, 78.
Pipilo erythrophthalmus. 46, 99, 183, 192.
alleni. 46.
Pipit. 44, 72, 73, 174, 194.
Piranga erythromelas. 101, 183, 193.
Planesticus migratorius. 47, 181.
Plectrophenax nivalis. 37.
Plover, Blackbellied. 68, 69.
Golden. 69, 71, 72, 75, 76, 78, 204.
Piping. 69.
Semipalmated. 68, 70.
Podilymbus podiceps. 44.
Polioptila caerulea. 179.
Pooecetes gramineus. 37.
Progne subis. 101.
Protonotaria citrea. 107.
Ptarmigan, Allen's. 119, 120.
Welch's. 119.

Quiscalus quiscalus. 183, 191.
aeneus. 34, 192.

Rail, King. 65, 68.
Sora. 68.
Virginia. 68.
Red-head. 18, 75, 76.
Red-poll. 36, 192.
Redstart. 71, 174, 184, 194.
Regulus calendula. 46, 178, 195.
satrapa. 178, 195.
Riparia riparia. 104, 183, 193.
Rissa tridactyla. 187.
Robin. 24, 47, 58, 73, 76, 181, 195, 202.
Ruff. 199.

Sanderling. 69, 73, 74, 75, 77, 78.
Sandpiper, Least. 68, 69.
Pectoral. 68, 78.
Semipalmated. 68, 70.
Red-backed. 70, 72, 75, 76.
White-rumped. 72.
Sapsucker, Yellow-bellied. 45, 70, 72, 73, 76, 77, 195.
Sayornis phoebe. 26, 45, 183, 190.
Scoter, Surf. 199.
White-winged. 18.
Seiurus aurocapillus. 184, 194.
noveboracensis. 194.
Setophaga ruticilla. 174, 184, 191, 194.
Shoveller. 75.
Shrike, Migrant. 105.
Northern. 105, 193, 202.
White-rumped. 118.
Sialia sialis. 47, 181, 191, 195.
Siskin, Pine. 38.
Sitta canadensis. 177.
carolinensis. 177, 184, 195.
pusilla. 46.
Snipe, Wilson's. 44, 68, 69, 70, 71, 72, 75, 76, 184, 197.
Snowflake. 37, 192.

Sora. 75, 76.
Sparrow, Bachman's. 97, 128.
Chipping. 40, 66, 68, 69, 183, 192.
English. 13, 22, 24, 35, 73, 103, 126, 128, 152.
Field. 41, 66, 68, 69, 74, 76, 77, 183, 192.
Fox. 78, 98, 192, 203.
Grasshopper. 38, 46, 73, 192.
Henslow's. 38, 46, 73, 74, 125.
Lark. 39.
Leconte's. 199.
Lincoln's. 67, 97.
Nelson's. 199.
Savanna. 37, 66,69, 71, 75.
Song. 46, 66, 73, 74, 75, 97, 118, 183, 192.
Swamp. 75, 98, 192.
Tree. 40, 192.
Vesper. 38, 77.
White-crowned. 39, 69, 75, 76, 77, 184, 192.
White-throated. 39, 66, 69, 71, 72, 73, 74, 75, 76, 77, 192.
Sphyrapicus varius. 45, 195.
Spinus pinus. 37.
Spiza americana. 100.
Spizella monticola. 40, 192.
socialis. 40, 183, 192.
Squatarola squatarola. 203.
Starling. 183, 191.
Stelgidopteryx serripennis. 104.
Strix varia. 56.
alleni. 45.
Sturnella magna. 33, 46, 183, 191.
argutula. 46.
Sturnus vulgaris. 183, 191.
Swallow, Bank. 7, 12, 102, 104, 183, 193.
Barn. 12, 102, 103, 183, 193.
Cliff. 13, 102, 193.
Rough-winged. 13, 102, 104.
Tree. 12, 13, 46, 75, 76, 78, 103, 183, 193.
Swan, Whistling. 21, 125.
Swift, Chimney. 102, 182, 190.
Syrnium varium. 189.

Tanager, Scarlet. 72, 101, 183, 193.
Teal, Blue-winged. 66, 68, 70, 72.
Green-winged. 65, 68, 70, 72, 73, 75, 78.
Telmatodytes palustris. 177, 195.
Tern, Common. 72, 73, 74.
Thrasher, Brown. 46, 65, 68, 78, 118, 176, 195, 202.
Thryomanes bewicki. 176, 195.
Thryothorus ludovicianus. 46, 175.
Thrush, Gray-cheeked. 67, 69, 70, 71, 78, 180, 195.
Hermit. 47, 69, 70, 71, 74, 77, 78, 181, 195, 203.
Olive-backed. 65, 67, 69, 70, 71, 77, 78, 180, 195, 199.
Wilson's. 24, 179, 195.
Wood. 179, 184, 195.
Totanus melanoleucus. 197.
Towhee. 46, 77, 78, 99, 183, 192.
White-eyed. 46.
Toxostoma rufum. 46, 175, 195.
Trochilus colubris. 190.
Troglodytes aedon. 176, 195.
Turnstone, Ruddy. 69.
Tyrannus tyrannus. 26, 182, 190.

Vermivora celata. 109.
chrysoptera. 108.
leucobronchialis. 108.
peregrina. 109.
rubricapilla. 109.
Vireo flavifrons. 184, 193.
gilvus. 184, 193.
noveboracensis. 107.
olivaceus. 183, 193.
Vireo, Warbling. 24, 106, 184, 193, 203.
White-eyed. 107.
Yellow-throated. 106, 184, 193.
Vireosylva gilva. 106.
olivacea. 105, 191.
Vulture, Black. 45.
Turkey. 45, 77.

Warbler, Bay-breasted. 65, 70, 77, 112, 194, 203.
Black and White. 46, 107, 193.
Blackburnian. 113.
Black-poll. 65, 66, 113, 194, 203.

Black-throated Blue. 65, 70, 71, 110, 194.
Black-throated Green. 66, 72, 114, 194.
Blue-winged. 108, 193.
Brewster's. 108.
Canadian. 71, 174, 194.
Cape May. 69, 70, 71, 110.
Cerulean. 112.
Chestnut-sided. 112, 184, 194.
Connecticut. 72, 172.
Golden-winged. 108, 193.
Hooded. 173, 184, 194.
Kentucky. 172.
Kirtland's. 114, 128.
Magnolia. 71, 111, 194.
Mourning. 172.
Myrtle. 46, 65, 70, 71, 73, 74, 111, 194, 203.
Nashville. 109.
Orange-crowned. 73, 109.
Palm. 46, 65, 70, 71, 72, 73, 75, 114.
Parula. 193.
Pine. 46, 114, 194.
Prairie. 115.
Prothonotary. 107, 124.
Tennessee. 109.
Wilson's. 173.
Worm-eating. 107, 193.
Yellow. 110, 184, 194.
Yellow Palm. 46, 194, 203.
Water-Thrush. 115, 194.
Louisiana. 115.
Waxwing, Bomehian. 55.
Cedar. 24, 66, 104, 193.
Whippoorwill. 18, 65, 66, 67, 70, 77, 190.
Wilsonia canadensis. 174, 194.
mitrata. 173, 184, 194.
pusilla. 173.
Woodcock. 65, 66, 68, 69, 72, 74, 185.
Woodpecker, Downy. 68, 72, 190.
Hairy. 72, 189.
Pileated. 45.
Red-bellied. 45.
Red-headed. 24, 126, 140,
Red-cockaded. 45, 199.
Southern Downy. 45.
Wren, Bewick's. 57, 176.
Carolina. 46, 67, 175, 195.
House. 22, 75, 176, 195.
Long-billed Marsh. 22, 66, 76, 177, 195.
Short-billed Marsh. 176.
Winter. 75, 77, 176, 203.
Western Winter. 15.

Xanthocephalus xanthocephalus. 32.

Yellow-legs. 65, 69.
Greater. 69, 72, 76.
Yellow-throat, Maryland. 46, 184, 194.
Northern. 24, 66, 78, 172, 185.

Zamelodia ludoviciana. 100, 183.
Zenaidura macroura. 45, 184, 187.
Zonotrichia albicollis. 39, 184, 192.
coronata. 39, 192.